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THE

AMERICAN JOURNAL OF PHARMACY.

JANUARY, 1856.

CONVENIENT MODES FOR ADMINISTERING COD-LIVER OIL.

By J. M. Maisch.

Cod-liver oil has, for most patients, who are advised to take it, an unpleasant odor and disagreeable taste, in such a degree, as to cause an aversion of the palate and nausea of the stomach. Children, although, at first, disgusted with its taste, usually become accustomed to it, and even find it pleasant and agreeable; but adults, in many cases, cannot overcome the aversion, no matter whether they take the oil with bitters, peppermint, mucilage, milk or brown stout or porter. To avoid the nauseous taste, Deschamps in 1843, proposed a cod-liver oil soap to be prepared of 60 parts of the oil, 8 parts of caustic soda and 2 of water. This soap is given in pills, but it is evident that in order to administer the oil in a proper dose, the patient would have to take a large number of pills, about sixty, each weighing four grs., might be considered equal to a teaspoonful of the oil. Syrups of cod-liver oil have been recommended by Duclos and by Mouchon, which consist of emulsions of the oil with gum arabic and water or peppermint water, to which simple syrup or syrup of gum arabic is added. Both syrups do not cover much of the unpleasantness of the oil, and have the material disadvantage of being bulky and liable to spoil.

Being called upon, I attempted to find out a mode of preparing the oil, which would combine the advantages of correcting its nauseousness, and having it in a bulk as small as possible, without much liability to undergo unfavorable changes on keeping the preparation for a reasonable time. The following formula, I

326332

think, will answer these demands, the preparations having agreed well with patients, who were vomited by the pure oil.

℞. Magnes. ust.	℈j.	℞. Magnes. calc.	℈j.
Aq. Rosæ	f. ℥j.	Aq. commun.	f. ℥i.
Olei Morrhuæ.	f. ℥ij.	Olei Morrhuæ.	f. ℥ij.
Aq. Amygd. Amar.	f. ʒij.	Olei Anisi	gtt. ij.
Syr. Rubi idæi,	f. ʒvj.	Extract. Glycyrrh.	ʒij.
M.		Syrup Althææ.	f. ʒvj.
		M.	

℞. Potass. carb. ʒss. vel. ʒj.
Aq. flor. Aurant. f. ℥j.
Mel. Rosat. f. ℥j.
Olei Morrhuæ. f. ℥ij. M.

The carbonate of potassa is first to be dissolved or the calcined magnesia to be mixed with the water, then the oil added, to which, while floating on the water, must be added the oil of aniseed (or peppermint, fennel, &c.,) and after shaking, the syrup is to be admixed by agitation of the vial. A partial saponification takes place, and the cod-liver oil soap, acting as intermedium, a homogeneous mixture is formed on shaking, each fluidounce of which, contains a tablespoonful of the oil. By the formation of soap, its taste is well covered, and from the action of the aromatic, &c., it agrees well with the stomach. The mixture separates on standing, and must, therefore, be shaken before use, when it will readily mix again. The color of the raspberry syrup, in the above formula, is changed to a blue violet without impairing its fragrance; other fruit syrups, such as blackberry, mulberry, cherry, &c., may be substituted for it, the darker ones of which, hardly undergo a perceptible change of color.

Together with cod liver oil, if prepared in the above manner, iodide of potassium, morphia, opium, colchicum, digitalis, hyoscyamus or any other medicine, may be administered at the same time, as most medicines are soluble in water, that might be used in diseases in which cod-liver oil is indicated.

New York, December, 1855.

ELEMENTARY ANALYSIS OF SO-CALLED "FALL STRAINED SPERM OIL."

By EDWARD R. SQUIBB, M. D., U. S. Navy.

Assistant Director Naval Laboratory, New York.

In examining a new artificial oil, offered as a substitute for the so-called sperm oils in use by the different departments of the General Government for light houses, and for lubricating machinery, it became necessary to make an analysis of the so-called sperm oil, at present generally used for these purposes, as a standard for comparison.

As the results of this analysis differ materially from any of the few to be found in the usual chemical authorities—and as it is later than any that I know of, and appertains to the oil now in common use, as "Fall Strained Sperm Oil," I offer it for publication, that it may be available to those whose research may be in this direction.

The physical properties of the oil examined were as follows: Clear, pale yellow, slightly tenacious, with the fishy odor rather of whale than sperm oil. Its viscidity was found to be 11.09, compared with distilled water as a standard of unity.

Its specific gravity was .881. At 44° F. became opalescent, and at 40° opaque. At 30° too thick to pour well, and at 8° of the consistence of tallow, nearly.

(Winter strained sperm oil remains transparent when poured upon ice at temperatures above freezing.)

Although furnished upon contract, as "pure sperm oil, fall strained," it is probably quite free from any admixture of pure sperm oil, as obtained from the head of the sperm whale, but is rather an admixture of the blubber oils of the sperm and common whales. It burns with a clear white steady flame at first, but even in lamps with a strong draught, requires frequent trimming. In the Carcel lamp (used in light houses generally,) it burns with less need of frequent trimming, but leaves a residue that cannot be used for illumination, and which must be removed from the lamps from time to time.

The quantity analysed was ·2033 grammes.

Yielding of Carbon	·16510	or	81.20 per cent.
Hydrogen	·02604	"	12.80 "
Oxygen	·01216	"	6.00 "
Nitrogen	a trace.		
	·2033		100.00

The combustion was effected by oxide of copper, by Liebig's method; and the oil was analysed in the condition in which it is used,—that is, without depuration, or even drying farther than that the capsule containing the oil for combustion was kept 12 hours over sulphuric acid.

The analysis was repeated three times without material variation, and may be considered accurate.

U. S. Naval Laboratory, New York, Dec. 6th, 1855.

ON A NEW GUN COTTON.

By Alonzo Caldwell.

To the Editor of the American Journal of Pharmacy:

Dear Sir:—I respectfully submit to your kind attention the following result of an experiment made some six or eight years ago, on the then newly invented gun cotton. I am thus led to give publicity to the matter by the many inquiries lately made in regard to its properties as a substitute for gunpowder, either as a blasting agent, or as an advantage in the use of fire arms. The subject, however, is worthy of further investigation.

I procured from one of our most skilful chemists, a small quantity of newly prepared gun cotton, and having reserved one-half for future experiments, placed the remainder in a filtered saturated solution of chlorate of potash, and allowed it to remain there for fifteen minutes. It was then gently pressed between the folds of a clean linen rag, and dried over a heat of 150 degrees. The cotton thus prepared exploded much quicker, and more like the violent fulminating silver, than the ordinary gun cotton.

By the request, and in the presence of Mr. Scholes, of Baltimore street, I made a few experimental shots with the two preparations from a pair of patent duelling pistols, resulting as follows: Standing at the distance of twenty feet, (the length of

the yard,) I fired a pistol loaded with nine grains by weight of the ordinary cotton, at a piece of yellow pine door, one inch in thickness. The ball entered the door about half way. I then fired with two grains of the cotton which had been treated with the solution of chlorate of potash. The pistol bursted into several pieces, part of the nipple entering my fore finger, the mark of which I still bear. The remaining pistol was then loaded with one grain of the same cotton, when the ball passed entirely through the door, making a perfectly smooth perforation. The rebound of the pistol was so great as to cause me pain for several hours after firing. I have never since experimented with the cotton, but think it might be used admirably for blasting purposes.

Respectfully yours, &c.,

ALONZO CALDWELL.

Baltimore, Dec. 10th, 1855.

ON ACID NITRATE OF MERCURY.

By B. A. SHAKSPEARE.

To the Editor of the American Journal of Pharmacy.

Having had occasion to prepare the acid bi-nitrate of the deutoxide of mercury to fill an order, I proceeded according to the Dublin recipe in the U. S. Dispensatory, as follows: "Take pure mercury, two ounces, (avoird.) nitric acid, one fluidounce and a half, (imperial measure,) distilled water, one ounce and a half; in the acid first diluted with water, dissolve the mercury with the application of heat, and evaporate the solution to the bulk of two fluidounces and a half."

Proceeding as above directed I failed to make the solution, finding, at the close, not only a heavy crop of crystals, the basic nitrate and subnitrate, but also a considerable portion of undissolved mercury. I then proceeded to investigate the causes of failure, by forming a recipe from the chemical formula of the elementary constituents of the preparation. Now to form an acid bi-nitrate of the deutoxide, three equivalents of mercury will require eight equivalents of dry acid to form the neutral salt, and one or two additional equivalents for the acid solution; two additional equivalents being necessarily broken up to furnish

to the mercury six equivalents oxygen; whilst two eqs. binoxide nitrogen are given off as gas. The reaction is represented by the formula:

$$3Hg + 10\,NO_5. = 3\,HgO_2, 6\,NO_5 + 2NO_2 + 2NO_5.$$

In the Dublin recipe the quantity of acid is insufficient, as will appear from the following calculation—

One and a half ounces of distilled water, imperial measure, weigh 656.25 grains; the same bulk of acid of the sp. gr. 1.5, the strength ordered by the Dublin Pharmacopœia will weigh 984.375, which, according to Professor Ure, will contain but 79.7 per cent. of dry acid; then $984.375 \times .797 = 784.54$ weight of dry acid in 1½ ounces. Two ounces of mercury weigh 875 grains, its combining equivalent is 101, while nitric acid is represented by the No. 54; then in round numbers $\frac{784.54}{54} = 14\frac{1}{2}$ equivalents nitric acid, and $\frac{875}{101} = 8\frac{3}{4}$ equivalents of mercury, which proportion is evidently insufficient to dissolve the mercury.

I would propose, as a correction of the error,* the following

* [Note.—After the above paper was in type, and too late to consult the author, we discovered that by assuming the equivalent of mercury as 101, instead of 202, the old number, he had rendered his calculations incorrect, and the formula based on them equally so. In following the Dublin Pharmacopœia he must have used a weak acid, probably the commercial nitric acid sp. gr. 1.34, which will account for his ill success. Taking the numbers used above for the Dublin proportions, viz., 875 grs. of mercury and 984 grs. of nitric acid, sp. gr. 1.5, the equivalents are $4\frac{1}{2}$ Hg. to $14\frac{1}{2}$ NO^5, which are as 3 Hg. to 10 NO^5.

Now the author having adopted 101 as the equivalent of mercury, should have used but one equivalent of nitric acid to make the nitrate of the red oxide of mercury, whereas he evidently intended to use the old equivalent 202 by his calling the salt bi-nitrate of the deutoxide. In the recipe proposed, the ratio of equivalents is as 3 Hg to $15\frac{3}{4}$ NO^5, which gives an excess of more than five equivalents of nitric acid, far too great an excess to render its use admissible. In view of the fact that much of the commercial white nitric acid has a sp. gr. of about 1.34, we have calculated the following as yielding a preparation nearly equivalent to that of the Dublin Pharmacopœia.

Take of Mercury,	2 ounces (Troy).
Nitric acid (sp. gr. 1.34),	3¾ (Troy).

Dissolve the mercury in the acid by aid of heat, and evaporate the solution until it measures two fluid ounces and a half.—Editor Amer. Jour. Pharm.]

recipe, which will give a uniform strength to the solution, and requires only our officinal acid, (sp. gr. 1.42,) instead of the stronger, which it is always difficult to procure.

℞. Hydrargyrum, ℥i (Troy.)
Acid. nitric. (sp. gr. 1.42) f. ℥ii.
Aqua dest. f. ℥iss.

In the acid diluted with the water, dissolve the mercury with the application of heat, and evaporate to two fluidounces.

This recipe will be found to give the proper proportion of acid, or nearly 10 equivalents of acid to three of mercury; our nitric acid of the sp. gr. 1.42 is a quadrahydrated acid, represented thus, $NO_5 + 4HO$, then in numbers

$$3Hg = 3(101 = 303,) \text{ and } 10(NO_5 + 4HO) =$$
$$10(54 + 36) = 900.$$

303 parts of mercury require 900 parts acid,
one ounce, 480 grains of mercury gives the proportion,
303 : 900 :: 480 : 1426. grains weight of acid required,
which is nearly three ounces, troy.

A fluidounce of water weighs 455.69 grains, consequently,

$$\frac{\binom{1426}{1\ 42}}{455.69} = \text{two fluidounces and a fifth.}$$

The importance of this preparation to the medical profession renders it desirable that a uniform, correct recipe should be adopted for its preparation.

Cynthiana, Kentucky, Oct. 2d, 1855.

CALCINED MAGNESIA.

By J. B. James, M. D.

Pure calcined magnesia, however prepared, has a taste somewhat resembling lime, and this taste is not removed either by allowing it to absorb water from the atmosphere, or by suspending it in water.

If a fine, soft carbonate be pulverized and calcined at a low red heat, a small proportion of chloride of ammonium, chloride of magnesium, or hydrochloric acid having been previously mixed with a portion of it, and placed at the bottom of the vessel in which it is to be calcined, the product will be more *compact* than

if it had been calcined without this addition, and should it contain a small amount of lime, this will have become a chloride, and it will consequently be less caustic.

Husband's calcined magnesia, the most popular of the imitations of Henry's, is, like the latter, not a pure magnesia, but differs from it in containing water and an organic salt. If it be washed with distilled water it will be found to have the ordinary taste of good magnesia, while the water will have a pleasant saline taste, and will exhibit with chemical reagents the characteristics of a citrate. The amount of this salt contained in it is not uniform, but from an ordinary sample about two and a half per cent. of soluble salts may be obtained by washing and evaporation. Besides several incidental and confirmatory tests, the principal ones upon which I relied were, precipitating the solution (obtained by washing the magnesia with water) with acetate of lead, and finding the precipitate soluble in ammonia; and comparative tests with solution of sulphate of soda, and sulphate, hydrochlorate and citrate of magnesia.*

Trenton, N. J., Dec. 7th, 1855.

*[At the request of the author we washed a portion of Husband's magnesia, and obtained but six-tenths of one per cent. of soluble matter on evaporating the washings. A portion of this, was dissolved in water and the precipitate by acetate of lead, not in excess, was found to re-dissolve on the addition of liquor ammonia, or a solution of citrate of potassa; and when another portion of the salt is heated to redness in a tube, covered with a little ordinary magnesia, to exclude the air, it is at once blackened, indicative of organic matter. Whether this is citric acid, as believed by the author, whether it is an accidental contamination, or an intentional addition, with a view to modifying the taste and smoothness of the earth, we did not pursue our experiments far enough to determine, but in either case its presence is medically unimportant, unless existing in larger proportion than our experiments indicate. There is a feature of this magnesia, however, which deserves attention whenever Husband's magnesia is, by the physician or apothecary, used with a view to its basic power, and that is the fact of its being a partial hydrate, a fact which has been shown before. (See vol. xxii. page 383, and vol. xxiv. page 199 of this Journal.) In the trial made at this time, 100 grains taken from a closed bottle lost 11 grains by exposure to a red heat for twenty minutes.—Ed. Amer. Jour. Pharm.]

A PROPOSED TEST FOR MORPHIA.

By Robert F. Fairthorne.

When Labarraque's solution of chlor. soda is mixed with the solution of sulphate of morphia, U. S. P., a light orange colored transparent mixture is produced. The salts of morphia, when moistened with the solution chlor. soda, become of a dark orange.

To a solution of sulphate of morphia made in the proportion of (gr. i. to ʒi. of water) a small quantity of Labarraque's solution was added, which produced a bright orange color, which, when a little aq. ammon. was mixed with it, changed to a dark red. A small quantity of chloride of lime added to the above named solution of morphia, has the same effect upon it as Labarraque's solution, but if added in excess the solution will be colorless. These changes of color are owing to the action of chlorine on morphia.

Experiment.—Six grains of pure morphia were put into a vessel containing ½ oz. of distilled water, in which but a small portion dissolved, owing to the insolubility of morphia in that menstruum. Chlorine gas was passed through the mixture, and the morphia dissolved immediately, the solution changing to an orange red color. This was evaporated spontaneously between 32 and 35° Far. When evaporated to about ʒii. the solution changed to a green color, and deposited a white powder (which dissolved when the solution was placed in a warm room). When a few drops of this green solution were added to some water it produced a red colored solution. The green solution was then evaporated to dryness, and a reddish brown colored substance was left behind, which looked as if the morphia had become burnt by the action of the chlorine, but that this was not the case was proved by its being perfectly soluble in water, producing a dark transparent solution, and possessed of the characteristic bitter taste of salts of morphia.

The last experiment was repeated with nearly the same results. The solution of chlor. of morphia was evaporated spontaneously at about 60° Fah., but when evaporated to ʒii. it did not change color.*

Philadelphia, October 26, 1855.

* Liebig (Traité de Chimie Organique, tome ii. p. 552) says that the salts of morphia put in contact with chlorine water, become first orange, afterwards red, and finally yellow, and precipitate a substance of the same color.

AN INTRODUCTION TO PRACTICAL PHARMACY, designed as a Text-book for the Student, and a guide to the Physician and Pharmaceutist. With many formulas and prescriptions. By EDWARD PARRISH, &c., with 234 Illustrations. Philadelphia: Blanchard & Lea.

This book was noticed briefly in the last number of this journal by the editor. We purpose, at present, to consider it somewhat more in detail, and to present such extracts from it as will show its general scope and character.

It is not based on the superstructure of any foreign publication, as has usually been the case with books, on similar subjects, issued from the American press, but is original in conception with its author, who, from his experience both as a pharmaceutist and as a lecturer and teacher of practical pharmacy to medical students, has become aware of the want of a text-book in this department, which he has thus endeavored to supply.

It contains instruction for the inexperienced student and apprentice, of a practical kind, commencing with the "rudiments," given in an easy conversational style, sometimes with rather an amusing degree of minuteness, (ex. gr. p. 80 on folding filters, p. 499, on powders,) exemplified with many wood cuts, of which the one annexed is a favorable specimen. The officinal preparations are arranged in groups, under the appropriate classes, in a way that effects a great saving of space, giving at the same time a clear view of their composition. To show his method of doing this, we quote the syllabus of the medicated waters:—

AQUÆ MEDICATÆ, *U. S.*

FIRST CLASS.—*By trituration with an insoluble substance which is afterwards separated by filtration.*

Officinal name.	Proportions.		Comp.		Dose.
Aqua Camphoræ,	Camphor ʒj,	Carb. Magnes. ʒij	to Oj=3 grs.	to fʒj	fʒss.
" Amygdalæ Amaræ,	Oil ♏ xvj,	do.	ʒj to Oij=1 drop	to fʒj	fʒj.
" Cinnamomi,	Oil ♏ xvj,	do.	ʒj to Oj=2 drops	to fʒj	fʒij.
" Fœniculi,	do.	do.	do.	do.	do.
" Menthæ Pip.,	do.	do.	do.	do.	do.
" " Virid.,	do.	do.	do.	do.	do.

SECOND CLASS.—*By distillation.*

Aqua Rosæ, Rose petals ℔j to Oj.

THIRD CLASS.—*By charging water with gas.*

Aqua Acidi Carbonici, 5 parts of CO_2 to 1 of water.

The syllabi are followed by brief accounts of the processes necessary, with occasional remarks on such as seem to require explanation. After which are described the non-officinal preparations of the same class in greater detail, with new remedies and their combinations and numerous recipes, many of which are valuable and not readily accessible to druggists generally. Among these latter, are a number which have been hitherto confined to the establishment with which the author is connected, which are communicated with his opinion as to their merits and advantages, given with a characteristic frankness, which is refreshingly in contrast with the reserve sometimes manifested even by respectable pharmaceutists as to private formulæ, the exclusive possession of which is thought to tend to their pecuniary advantage. Throughout the work, the author has interspersed various observations, suggested by the subjects under consideration, which travel occasionally out of the strict line of precedent, but are interesting, and have generally a practical bearing. As the general arrangement is described in the notice in the last number, we do not think it necessary to allude to it any further, but shall proceed to extract various matters which appear to be novel or interesting.

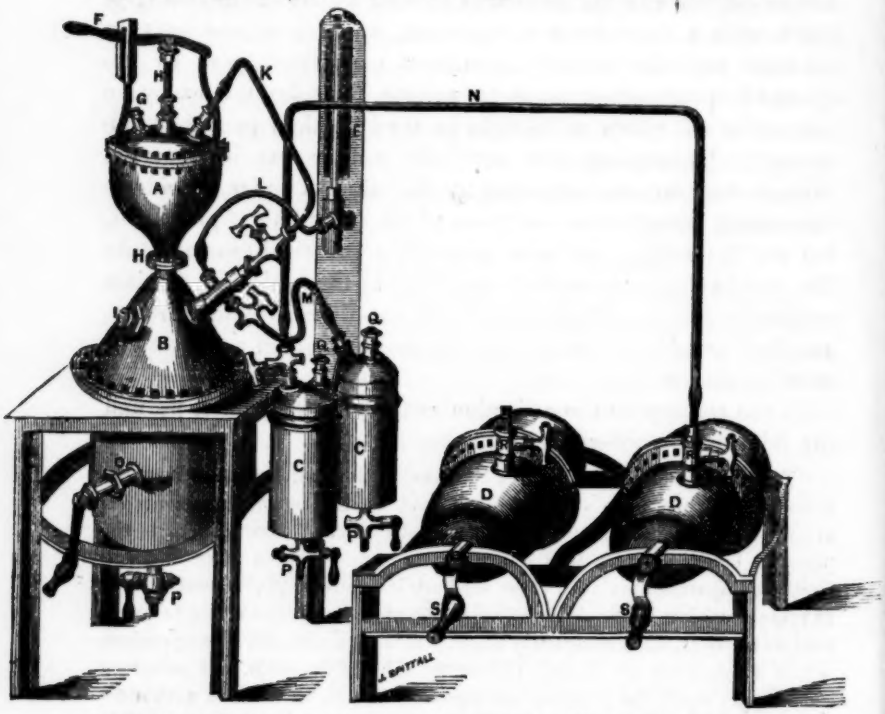
In the chapter on the collection and drying of plants, we find the following in reference to Shaker herbs:—

"The 'United Brethren,' called Shakers, at their settlement in New Lebanon, New York, have very extensive and convenient arrangements for drying these vegetable materials. A series of shelves of wire network is disposed in layers at suitable distances from each other, in large and well ventilated apartments; upon these the herb is carefully placed, and allowed to remain subject to the desiccating action of the air, circulating below as well as above it, until completely dried. It is then removed to a capacious bin, of which many are arranged along the sides of the room, and preserved until nearly ready for pressing—an operation which, in common with some other cultivators, the Shakers practice upon every article of the vegetable Materia Medica which they cultivate or vend.

This, while it has its advantages, is liable to some objections. It has been said that, owing to the moist condition to which the plants require to be brought before pressing, the packages are liable to become mouldy in the middle. I have never met with an instance of this kind, however, and have no doubt but that the excellent reputation the Shaker herbs have attained is well founded. Another objection to these herbs, of a very different charac-

ter, is, that they are not adapted to the examination of the physical cha racteristics of the plants ;a pharmaceutical student, placed in an establishment where they are sold to the exclusion of the dried plants in bulk, enjoys no opportunity of familiarizing himself with this extensive class of medicines, at least so far as their physical and botanical characters go: to this may be added the difficulty in noticing any deficiency in quality, any intentional or accidental adulteration, or error in labelling the articles."

In the chapter on medicated waters, which we have already quoted from, is included an account of the manufacture, &c., of mineral water, with descriptions of apparatus employed. We copy the engraving of Bernhard's apparatus and fountain :—



A. Acid reservoir. B. Generator, connected with A. by glass valve H. and by the pipe K. (to equalize the pressure). C. C. Washers. D. D. Fountains. G. I. Openings to supply the acid reservoir and generator. Q. Q. R. R. Openings for supplying the washers and fountains. P. P. Openings for emptying generator and washers. E. Guage for indicating the pressure. L. M. N. Connecting pipes with stop cocks.

We omit the detailed description for want or space.

The generators and washers are copper, solidly tinned; the fountains cast iron, enamelled on the inside. The cost of the whole apparatus, Mr. Parrish states, varies according to size, &c., from $235 to $400. The fountains are necessarily too heavy to be readily portable, consequently the apparatus can only be used to advantage where the mineral water is made on the premises at which it is sold.

"Nichols' Patent Mineral Water Apparatus," is also figured and described. This is on a smaller scale and less costly.

We observe that the author has omitted altogether the important subject of coolers for mineral water. There is no doubt that block tin pipe, coiled in an ice box, as described in the last volume of this Journal, page 409, forms the best arrangement for this purpose which has yet been introduced, being efficient, economical and free from any danger of communicating deleterious qualities to the water.

From the chapter on "Evaporation and the Extracts," we take the following:—

Extractum Ignatiæ Amaræ Alcoholicum.

"This preparation has been proposed as a 'remedy' for dyspepsia, attended with nervous depression, and extensively advertised as such by a clergyman of Brooklyn, N. Y., who, having been cured by it, makes it known to others for the benefit of humanity. The recipe, as here given, is an improvement upon his, and is offered for the benefit of apothecaries, who may be called upon to make it.

The beans of St. Ignatius, like nux vomica, have a very horny and tough kernel (due to bassorin and fixed oil), which renders it difficult to powder them so as to extract their soluble matter. Professor Procter recommends the following process for their extraction. The beans are bruised in an iron or brass mortar, until reduced to small fragments or very coarse powder; they are then moistened with water in a covered vessel, and heated until the tissue of the pieces has become soft, and can be bruised into a pulpy mass. This is then mixed with twice its bulk of alcohol, sp. gr. ·835, and allowed to macerate in a close vessel in a warm place for 24 hours, and then treated by displacement until 8 or 10 times the weight of the drug is obtained. The alcohol is then distilled off and the residue heated in a water bath until reduced to the consistence of a soft extract. By this process, about 10 per cent. of a brown colored, intensely bitter extract may be obtained. This extract is much stronger than extract of nux vomica, and is directed to be made into a mass with gum Arabic, in the proportion of 30 grains of the extract to 10 of the gum, and divided into 40 pills (¾ grain in a pill), one of which is to be taken three times a day.

It is scarcely necessary to remark that the free use of a medicine of such power, containing one of the most poisonous of alkaloids, as a popular remedy, to be given without the advice and care of a physician, is most dangerous and unjustifiable."

Bean of St. Ignatius afforded to Pelletier and Caventou, 1·2 per cent. of strychnia, from which the alcoholic extract would contain in the quantity directed to be taken daily (2¼ grs.), about ⅓ gr. of strychnia, beside the brucia which is associated with it. At the first blush, it appears to indicate an unusual amount of philanthropic liberality on the part of the "clergyman" of Brooklyn, that he should be willing to subject himself to the heavy expense of advertising this remedy extensively throughout all parts of the country, the recipe to be furnished gratuitously by mail to any applicant; but on enquiring a little more closely, we find that the 40 pills are furnished at one dollar per box, and as almost every invalid who applies for and receives the recipe, orders a box of the pills, the clergyman is probably well paid for both his benevolence and his outlay. We observe that there is now an opposition "clergyman" in New York, who supplies a recipe for similar complaints, and within a week or two another in this city has commenced advertising a remedy for rheumatism, to be sent in like manner by mail. As this method of introducing a medicine seems likely to become a favorite expedient of quackery, it is proper that it should be understood.

Under the head of "Concentrated or Resinoid Extracts," in this chapter, the author has included an account of certain preparations used by the "Eclectic" practitioners, viz: Stillingin, Leptandrin, Hydrastin, Sanguinarin, &c.

In the chapter headed "Lignin and its derivations," is a very full account of cellodion, its preparation, &c. A convenient arrangement for keeping collodion ready for use, consisting of an ounce vial, with a camel's hair pencil connected with the cork, is exemplified in the figure which we copy from page 241. From this chapter we quote as follows in regard to creasote:—

"The article now generally sold as creasote, is quite different from what was formerly met with under that name. It is imported from Germany, and is much cheaper than the old kind, which came from England, and was obtained from wood tar as above. The present article, which is remarkable for readily assuming a brown color on exposure to the light and air, is chemically a hydrated oxide of phenyle, or carbolic acid, C_{12} H_5 O, and is

prepared from coal tar. It has a specific gravity of 1·062, and boils at 386°. A slip of pine wood, dipped first in this and then into hydrochloric acid, becomes blue, which is not the case with the true wood tar creasote. In an article on this subject, in the *New York Journal of Pharmacy*, Oct., 1853, Professor Edward N. Kent has given a method of manufacture and purification, which has proved successful in his hands, and expresses the opinion that carbolic acid is creasote in a purer form than that obtained from wood tar. It is certainly less disagreeable for use."

From the chapter on "Farinaceous and Saccharine substances," we take the following remarks on honey, which may be new to some of our readers:—

"It may not be generally known that the honey so extensively sold in the cities in tin cans holding a quart or more, and in bottles of somewhat less capacity, by the druggists and grocers, is a factitious article made on a large scale from Havana sugar; this fact, which has only recently come to light, will surprise many who have been favorably impressed with the article as remarkably pure and agreeable honey."

The accounts of gelatine and cod-liver oil are in extenso and contain much new matter.

We extract a portion of his observations on citrate of magnesia. We understand the use of a small portion of bicarbonate of potassa in this preparation, is to be directed in the duodecimo edition of the Pharmacopœia shortly to be published:—

Liquor Magnesiæ Citratis, U. S.

"In presenting a formula for this new and very popular cathartic beverage, I shall depart from the usual custom of following the *Pharmacopœia*. It is to be regretted that, from taking the officinal directions, many pharmaceutists are compelled to give up the preparation of the solution, and purchase it of other apothecaries or druggists, so that its manufacture is thrown too much into a few hands. One druggist in Philadelphia has frequently sold a gross of bottles of the citrate per day, on an average, for thirty days in succession. The recipe below is that I have used for some years; it is original with myself, and I believe never fails to furnish a satisfactory article.

	To make one doz.	To make one bottle.
Take of Citric acid	9 ounces (offic.)	℥vj.
Magnesia	2 ounces and 5 drachms	℥j+gr.xlv.
Syrup of citric acid .	12 fluidounces	f℥j.
Water	1 gallon, or sufficient	f℥xss.

Make an acid solution of citrate of magnesia with the citric acid, magnesia, and 3 pints of the water (f℥iv in making a single bottle); to this add the lemon syrup, and divide the whole among 12 f℥xii with the re-

mainder of the water, adjust the corks, and add to each bottle about ʒj of crystallized bicarbonate of potassa.

If the magnesia is rather poorly calcined, and contains some carbonate, it may be best to increase the proportion from 105 to 110, or even 120 grains, though this must be done with great caution, as the slightest excess may occasion the precipitation of a large amount of the hydrated citrate. If the preparation is not decidedly acid, it will be disagreeable to take, and will possess no advantage over common saline cathartics, but if too strongly acid, it will be almost equally objectionable. The bicarbonate of potassa has the great advantage of neutralizing a portion of the acid, while it forms a very soluble and agreeable salt. If carbonate of magnesia were used, in the proportion of the *Pharmacopœia* formula, the tendency to deposit would be increased, which is the greatest practical difficulty with this solution."

The officinal preparation is one-fourth stronger than the solution made by the above formula.

We copy from the chapter on "Opium," the following characteristic remarks on the abuse of this potent drug:—

"*The Abuse of Opium.*—The habitual use of the preparations of opium as a means of intoxication, is an evil, the extent of which is scarcely appreciated by the profession, or by the community at large. There are shops in the outskirts of our large cities in which the sale of landanum forms one of the principal items of business. These peddle it out to every poor victim, who can produce a few pennies to purchase a temporary relief from imaginary pains. So common is this article of trade, that even little children are furnished with it, on application, as if it were the most harmless drug. It is sold in these shops at half the price maintained by respectable establishments, and there can be no doubt that its intoxicating effects are sought by many, who use it as a substitute for alcoholic drinks. Individuals who would shrink from the habitual use of spirituous liquors, employ this *medicine*, under a false persuasion that it is useful or necessary to allay some symptom of a chronic disease, until they become victims to one of the worst of habits. There is scarcely an apothecary in our large cities who cannot relate instances of opium intoxication that have come under his own notice, and been served at his own counter. Females afflicted with chronic disease; widows bereft of their earthly support; inebriates who have abandoned the bottle; lovers disappointed in their hopes; flee to this powerful drug, either in its crude form, in the form of tincture, or some of its salts, to relieve their pain of body or mind, or to take the place of another repudiated stimulant. Such, too, is the morbid taste of these, that they think they require the soporific influence of opium to fill up the measure of their life enjoyment, just as the drunkard is wedded to his cups, or the tobacco-user to the weed.

The prevalence of this kind of indulgence is liable to increase in proportion as legal restrictions are placed upon the sale of alcoholic stimulants.

By the so-called liquor laws, the sale of spirituous liquors is also thrown into the hands of the druggist and apothecary; with him rests in a great measure the necessary discrimination as to the sale of these powerful agents; he must endeavor to draw a line between the purchaser who seeks them for an undue indulgence in their intoxicating effects, and one who will apply them to legitimate uses in disease. That this is a difficult duty cannot be denied, and its observance implies the exercise of great care and tact, as well as of moral courage."

We shall finish our extracts by presenting some recipes, taken from various parts of the book.

The Compound Fluid Extract of Buchu.

Take of Buchu in coarse powder . 12 ounces.
Alcohol . . . . 3 pints.
Water . . . . 6 pints, or sufficient.

Treat the leaves by maceration and displacement, first with a portion of the alcohol, and then with the remainder mixed with the water; evaporate the resulting liquid by a gentle heat to 3 pints, and to this add,

Sugar . . . . 2¼ pounds.

Continue the heat till it is dissolved, and, after removing from the fire, add—

Oil of cubebs,
Oil of juniper, of each . one fluidrachm.
Spirit of nitric ether . twelve fluidounces.

Previously mixed; stir the whole together.

Marshmallow Paste. Opaque Gum Paste. Pate de Guimauve.

Take of Gum Arabic, (white,)
Sugar, of each . . . . lbj.
Water . . . . . sufficient.
Orange-flower water . . . fʒiij.
White of eggs . . . . No. x.

Bruise the gum, dissolve it in the water, and strain; put the gummy solution upon the fire in a deep, wide pan, add the sugar, stirring continually until it has the consistence of thick honey, carefully regulating the temperature. Then beat the eggs to a froth, add them and the orange-flower water gradually to the paste, which must be continually stirred; continue to beat the paste until, in applying it with the spatula upon the back of the hand, it does not adhere to it, then run it out upon a slab, or into pans covered with starch.

Formerly this contained marshmallow; now it is, properly speaking, only an opaque paste of gum.

The *Iceland moss paste*, so extensively advertised of latter years, may be closely imitated by this process, slightly varying the flavor. The asserted presence of *Iceland moss* in it improves it only in name,

Medicated Secrets, or Cough Candy.

To ten pounds of melted candy, add the following mixture, and divide into secrets:—

Take of Tincture of squill		f℥iv.
Camphorated tincture of opium Tincture of Tolu	} of each	f℥ss.
Wine of ipecacuanha		f℥j.
Oil of gaultheria		♏viij.
" sassafras		♏vj.
" aniseed		♏iij.

Used *ad libitum* in ordinary coughs.

A New Remedy in Hemorrhages.

Take of Oil of erigeron	f℥j.
Sugar	℥ij.
Gum Arabic	℥j.

Triturate the oil with the gum and sugar into a dry powder, then add—

Water	f℥ij, f℥vj.

Sig.—Take a tablespoonful three times a day.

Dr. E. Wilson and others have had considerable success in the treatment of uterine hemorrhages with the oil of erigeron, in the doses here prescribed; each f℥ contains gtt. v of the oil.

Tinctura Cinchonæ et Quassiæ Composita.—Tonic Tincture.

Take of Cinchona, in coarse powder,

Quassia,	"
Colombo,	"
Gentian,	"
Serpentaria,	"
Chamomile, of each	℥ss.
French brandy	Oij.

Macerate 14 days, and extract by displacement. A very valuable combination of bitters, which, by the absence of the disagreeable resinous coloring matter of saunders, and by the employment of an acceptable form of alcohol as the menstruum, is adapted to supersede Huxham's tincture of bark. Dose, f j to f℥ss.

A good Preparation of Iron and Cinchona.

(Substitute for Tinctura Cinchonæ Ferrata.)

℞.—Tinct. cinchon. comp.*	f℥iv.
Ferri citratis	℥j.
Acidi citrici	gr.xv.

Triturate the citric acid and citrate of iron together, and dissolve in the

* Tinct. cinchonæ et quassiæ comp. makes a better preparation, and scarcely precipitates at all.

tincture of cinchona. Liq. ferri citratis f℥j may be used as a substitute for the rather insoluble salt. The dose is a teaspoonful, containing two grains of citrate of iron.

The citric acid breaks up any tannate of iron as soon as formed, and it is reproduced on the addition of an alkali. There is a liability to considerable precipitate of cinchonic red, but very little iron is thrown down.

"Chloroform Paregoric" of Dr. Henry Hartshorne.

Take of Chloroform,
Tincture of opium,
" of camphor,
Arom. spt. of ammonia, of each . . f℥iss.
Oil of cinnamon . . . . . gtt. iij.
Brandy . . . . . f℥ij.

Dose, f℥ss, or less in spasmodic affections of the stomach, cholera, &c. Several practitioners have used this preparation with favorable results in severe cases.

Effervescing Fever Powders.

Take of Citric acid, dried and powdered, ℥v.
Divide into twelve parts wrapped in white writing paper.
Take Bicarbonate of potassa, dried and powdered, ℥viss.
Divide into twelve parts, wrapped in blue paper.
Inclose these white and blue powders alternately in a tin box.

Directions.—Dissolve the contents of a white paper in a tumbler, one-third full of cold water, then stir in the contents of a blue paper and drink immediately.

A dose is usually given every two or three hours, during the prevalence of the fever.

Spice Plaster. (Dr. Parrish, Sen.)

Take of Powd. capsicum,
" cinnamon,
" cloves, each . . . 2 ounces.
Rye meal,
Spirits,
Honey, of each . . . . sufficient.

To be made into a cataplasm by trituration on a plate, and spreading upon a close fabric. It should be made up when required.

Aconitia Ointment.

Take of Aconitia . . . . . gr. xvj.
Olive oil . . . . . ℥ss.
Triturate together, and then incorporate with
Lard . . . . . ℥j.

A good substitute for this, which is a very expensive preparation, will be found among the liniments.

The formula for the liniment alluded to, will be found in a previous number of this Journal.*

Mr. Parrish has added, in the form of an appendix, a series of lists of medicines and apparatus, suitable for the outfit of a physician commencing practice, and also an interesting catalogue of plants growing in the immediate vicinity of Philadelphia, formulæ for the preparation of dietetic articles for invalids, &c.

We have looked over the volume pretty carefully, without observing any textual errors in the formulæ, and the few we have noticed in the body of the work are unimportant. The endeavor to embrace so much of the extensive range of matters, suggested by the plan of the book, gives it occasionally a somewhat heterogeneous aspect. In this respect, however, as in others, it represents, not unfairly, the present state of American pharmacy. In the remarks of the author on his favorite topics, there is, at times, a tendency to diffuseness, and there are occasional repetitions in the earlier chapters, which we think might have been avoided.

We have endeavored as fully as the limited space allotted us permitted, to give a fair view of the book, unbiased by feelings resulting from frequent personal intercourse with its author, or by respect for the honored name which he inherits; we are conscious, however, that we have been able to convey but an inadequate idea of its substantial practical value to all who are engaged in pharmaceutical pursuits. In conclusion, we will only add, that it is worth much more than its cost to every apothecary for his own use, and will prove also, a highly interesting and instructive work to place in the hands of his assistants. A. S.

* We have prepared an Aconite Ointment, which appears to be an efficient preparation, as follows:—

Take of strong tinct. of Aconite root	- -	f℥ij.
Simple ointment	- - - -	℥j.

Evaporate the tincture, by a gentle heat, to a soft extract, and incorporate with the ointment. A. S.

EXTRACTUM PRUNI VIRGINIANÆ FLUIDUM.

By William Procter, Jr.

Wild cherry bark is a favorite remedy with American physicians, and is equally popular in domestic practice. It was, for a long time, prepared pharmaceutically only in the form of infusion with cold water, ʒss to Oj. The necessity of having daily to prepare the infusion, lead Joseph C. Turnpenny and myself, in 1842, (see vol. xiv. p. 17, of this Journal,) to propose a syrup made by maceration and percolation, of the strength of one part of bark in six of syrup. This preparation met the favorable opinion of both physicians and apothecaries, was adopted into the Pharmacopœia of 1850, and continues in use. But the large portion of sugar it contains renders its continued use as a sedative tonic, by some patients, attended with gastric derangement, to overcome which difficulty several preparations, under the name of "wine of wild cherry," have been introduced by B. J. Crew, and others, which appear to be concentrated cold aqueous infusions, to which sufficient alcohol has been added to preserve them, say 20 per cent. When used merely as a tonic, this addition may be unobjectionable or even, in some cases, advantageous, but where the sedative properties of the drug are sought, the addition of alcohol, in any form, is directly antagonistic in its effects to those of hydrocyanic acid, and consequently ineligible as an associated ingredient. In the preparation now offered to the medical profession, the use of alcohol is avoided altogether, and in lieu of cane sugar, sugar of milk has been substituted as the preservative agent, which not only avoids the cloying effects of the former, but is itself specially recommended as a dietetic agent in pulmonic diseases. Further, the strength of the preparation is much greater than any heretofore offered, and the process is such that, if practically carried out, the whole of the sedative and tonic virtue of the bark will be represented, whilst a portion of the tannic astringency, (the continued action of which causes costiveness,) is removed in course of preparation. The strength of the fluid extract is such that a teaspoonful (f.ʒj) faithfully represents thirty grains of the bark, which is equal to two fluid ounces of the infusion, or a table spoonful of the syrup. Sugar of milk is less sweet, and much less soluble in water, than

cane sugar, requiring six parts of that liquid to dissolve it, hence each dose contains less than ten grains of the sugar. It does not undergo the vinous fermentation until converted into grape sugar, and any tendency to enter the lactic fermentation is controlled by the hydrocyanic acid present.

In making this fluid extract, advantage is taken of the fact that alcohol will extract the amygdalin (the source of the hydrocyanic acid) from the bark without touching the agent which effects its decomposition in the presence of water, and, at the same time, removes the tannin, and the bitter principle on which its tonic power mainly depends. To insure the subsequent decomposition of the amygdalin, resort is had to the emulsin of sweet almonds, which, owing to its solubility in water, is much more manageable than the insoluble bark residue. The following is the formula :—

Fluid Extract of Wild Cherry Bark.

Take of Wild Cherry bark, in powder,	24	ounces.	(Troy.)
Sweet almonds . . .	3	"	"
Lactine, or sugar of milk, in powder	8	"	"
Alcohol, (88 per cent.)			
Water, each a sufficient quantity.			

Macerate the wild cherry bark in a pint and a half of alcohol for eight hours, introduce it into a percolator and gradually pour on alcohol, until five pints of tincture have passed, observing to regulate the passage of the liquid by a cork or stop cock. Introduce the tincture into a capsule (or distillatory apparatus if the alcohol is to be regained), and evaporate it to a syrupy consistence, add half a pint of water, and again evaporate until the alcohol is entirely removed. Beat the almonds, without blanching, into a smooth paste with a little of the water, and then add sufficient to make the mixture measure two pints ; add this to the solution of the bark, and introduce the mixture into a quart bottle, cork it, and allow it to stand twenty-four hours, with occasional agitation ; then quickly express in a close cloth, and filter into a bottle containing the lactine in powder. Then wash the dregs with more water, until sufficient has passed to make the filtered liquid and sugar measure three pints ; lastly, dissolve the latter by agitation or a gentle heat, and preserve the extract in closely stopped bottles.

Thus made, fluid extract of wild cherry bark is a dark, wine-red, transparent liquid, not syrupy in consistence, and possessed of a bitter, hydrocyanic taste. None of the oil of the almonds is retained, and probably very little if any of the emulsin, as it may be freely mixed with alcohol without precipitation.

As it is not certain that the preparation made with lactine will keep even with the assistance of the hydrocyanic acid, it is thought best to give another formula in which ordinary sugar is the preservative agent should it not prove sufficiently permanent.

The extract may be made with sugar, so as to have the consistence of the ordinary syrup, and the same strength as the above, by using but one pint of water for the almond emulsion, and stopping the washing of the dregs when a pint and a half of liquid has passed the filter, and dissolving in it three and a half pounds (troy,) of sugar. Made with sugar, the great bitterness of the preparation is masked by that substance, and it is more palatable than that made with sugar of milk. When the tonic properties of the drug are mainly sought, an admirable *wine of wild cherry bark* may be obtained by substituting half a pint of deodorized alcohol (88°) for the sugar of milk in the first formula.

Should it be desirable, the preparation may be made of double the strength indicated above, by using half the above proportion of water in making the almond emulsion, and half the amount of milk sugar, so that the whole shall measure a pint and a half, yet it is believed that the strength adopted above is fully adequate to the wants of the physician, the thorough decomposition of the amygdaline is rendered more certain by the larger proportion of water, which also more effectually retains the volatile oil in solution. When the almond emulsion is added to the solution of extract of cherry bark, a coagulation occurs from the formation of an albuminous tannate, and probably a portion of the tannin is removed from solution, yet this reaction while it does not prevent the agency of the emulsin in decomposing the amygdalin, and in no wise effects the bitter tonic principle, makes the preparation less astringent, and less liable to produce costiveness by continued use. If it should be desirable to make a preparation free from astringency, it can be readily accomplished by macerating in the aqueous solution of the alcoholic extract of the bark some strips of isinglass, previously softened in water, which will remove the tannin.

ON THE FALSIFICATION OF STRYCHNIA WITH OXALIC ACID.

The following letters, which have been placed at our disposal by Messrs. Powers & Weightman, exhibit one of the most barefaced frauds that has come to our notice. They are published for the benefit of those who have not yet been victimized. They may be of service to others who are in the habit of buying drugs from a species of irresponsible drug peddlers, who, though frequently knaves themselves, are more often the tools of greater knaves behind the screen. Drugs should never be bought from irresponsible parties, especially such drugs as are not at once recognizable by their appearance; and where, as is sometimes the case, drugs and chemicals are purchased at auction for what they will bring, and without being warranted, the druggist should always closely examine them, as *he* alone is responsible for their quality if they are afterwards sold.—EDITOR AM. JOURN. PHARM.

Cincinnati, Dec. 6th, 1855.

Messrs. Powers & Weightman, Philadelphia.

GENTLEMEN: I was handed this morning, by one of our retail druggists, a specimen of strychnia in crystals, which he purchased from one of our wholesale houses, for examination. It was put up in oval bottles, and labeled similar to yours, sealed with black wax, and stamped F. P. & W., and was sold as your manufacture.

I tested it for strychnia with chrom. potassa and sulph. acid; it gave no characteristic tint of the presence of strychnia; the crystals tasted acid, and in appearance resembled oxalic acid. I placed some of them in a test tube, and poured some water upon them; they dissolved immediately; in the solution chlor. calcium immediately caused a dense white precipitate, oxalate of lime, showing conclusively that the specimen, from its taste, solubility in water, and reaction with a lime salt, was only oxalic acid. I have a specimen of the same in my possession, which is at your disposal. This is the most outrageous fraud that has come under my observation for some time, and I think that you ought to take or make notice of it through the Journal of Pharmacy.

Yours, Respectfully, E. S. WAYNE.

P. S. I have every reason to suppose that the specimen was put up in Philadelphia. E. S. W.

—

Cincinnati, Dec. 10th, 1855.

Messrs. Powers & Weightman.

GENTLEMEN: We sent you a small box, a few days since, by express, containing some vials filled with oxalic acid, labelled strychnine, and your

seal or stamp on the bottles, counterfeited. Some four weeks ago, a very genteel young fellow, in appearance, called in the store, stating that he was from Philadelphia, and it was his intention, when leaving Philadelphia, to go to Arkansas, and that a druggist in Arkansas had written him to bring him 20 oz. of the above article, (the article is used largely there,) showing us some vials of genuine at the time, but, on his arriving here, he had changed his mind, and would not go, and there being no chance of sending the article, he would dispose of it at a little less than cost; he named his figures, about 15 per cent. less than your price; we bought it, and on examination of another package, we found the vials to contain what these do sent you. We had, however, sold a few vials, one of which was returned, saying it was not good, and to give him Rosengarten & Son's. We make this explanation that you may caution your customers, if you think best to be on the alert for him.

Yours, very respectfully,

J. & C. Reakirt.

PHYSICIANS AND PHARMACEUTISTS, AND THEIR RELATIONS.

By J. M. Maisch.

It was about a year ago, that, to a Philadelphia Sunday paper, the question was put, whether apothecaries were to be regarded as professional men or as tradesmen? To which that journal unhesitatingly replied, tradesmen. We must confess that we were, and still are dissatisfied with such an answer; opinions like this, promulgated by the press, cannot fail to injure the science of pharmacy, at least to do injustice to the true and faithful pharmaceutist. Druggists, properly so called, that is, dealers in drugs, certainly are tradesmen, inasmuch as their business consists chiefly in buying and selling, some manufacturing included. The *wholesale druggist* is a merchant, who has to study the influence of political and natural events on the market, the facilty of procuring his merchandise, the time and manner to get it off again; he has to study the proper mode of preserving drugs in an unaltered condition, or sometimes to turn them profitably into pharmaceutical or technical preparations; in a word, the wholesale druggist is a merchant, whose success, like that of other merchants, depends chiefly, if not entirely, on the quantity and quality of his commercial knowledge and virtues.

Vastly different from him is the apothecary, who, of course, if he does not mean anything else but a *retail druggist*, as he styles

himself, is a small tradesman, a shop keeper, who, instead of buying coffee by the sack and sugar by the barrel, and retailing it by the pound or half-pound as required, buys epsom salts by the quarter hundred weight, and senna by the five pounds, and retails them out by three or six cents worth; or he understands to buy a dozen of patent medicines, selling them from the six-penny candy stick to the $1 50 cholagogue or $3 00 catholicon; and if he chances to know that magnesia may be obtained from epsom salts and that opium contains morphia, he will call himself a *chemist*, and if he knows how to mix rhubarb and magnesia, or how to dissolve tartar emetic in water, he thinks himself justified to affix to his title *apothecary*. Alas! there is more truth in these remarks than we would wish to believe. We have heard of a Rev. gentleman, who never before had mortar and pestle in his hand; of a boarding house keeper, who well knew how to treat his boarders, but never had any idea of what a tincture was, both buying drug stores in two large cities; one, however, soon found out that it "would not do," and conscientiously returned to the pulpit; the other one still holds out, doing a good busines in nostrums of all sorts, having established the "principal depot" for some of them with his drug shop, where, sad to say, a half a dozen of prescriptions weekly find their way. We know a retail druggist, the owner of a fashionable store, who would not prepare Zittman's decoction in a metallic vessel, because he was afraid the "acid of the mercury would eat up the metal of the vessel." It will be remembered that during the boiling down of this preparation, calomel, enclosed in a bag, is suspended in the liquid.

These and other instances we know to be true; but what do they prove? They simply prove that there are a number of tradesmen or shopkeepers among the "retail druggists," who regard the vocation of the apothecary as a gold-mine to be explored by any one who feels inclined to do it, without reference to pharmaceutical knowledge or ignorance. Fortunately, however, a number of pharmaceutists know the duties and requisites necessary for them to come up to the demands of the science of modern pharmacy, and a science it has become now, especially since chemistry has been elevated really to a science, with sound foundations, and has commenced its researches with the matter of

the terrestrial bodies; pharmacy working with such, could not be placed out of its reach, and under the influence of chemistry it was to be built up to a science itself.

Some have spent a lifetime faithfully trying to keep pace with the rapid progress of pharmacy and its appertaining sciences, and—we know such cases—have not been able to reap the fruit of a quarter century's labor and research; while others, who never had an idea of what pharmacy is, set up a "drug shop," being contented to make money by retailing nostrums, and attempting even to cure, "on the most scientific principles," after having read that a proper dose of rhubarb operates on the bowels, and that corrosive sublimate and other mercurials are sometimes given in venereal diseases, and they do not stop to reflect how many lives are probably dependent daily on their ignorance or unscrupulousness. Might it not be well for such persons to try, by close study and practical exercises, to gather at least some necessary pharmaceutical knowledge? And surely it would not be too late; with a firm determination a man might accomplish it.

We have read in a history of the apothecaries, by A. Phillipe, that about the begining of the fifth century, the preparers of medicine separated from the physicians as a different class, but were scorned, being regarded as higglers. Could it be otherwise now, in the face of the numerous abuses perpetrated on science and the public, if pharmacy had not obtained a higher degree corresponding with the actual progress of the natural sciences?

But how guard against, how remedy such evils?

In most parts of Europe, a strong restriction exists, in the conducting of the apothecary business, a heavy license being imposed on it, a tradition from the middle ages. But what secures there to the pharmaceutist high respect is, the necessity of a professional education, of a thorough acquaintance with theoretical and practical pharmacy, of passing stringent examinations, previous to being recognized as such, and their own zeal for scientific researches. Such is not the case here. The exercise of pharmacy is not restricted by law; it is *legally* considered a trade, and it depends on pharmaceutists themselves, on the physicians, and also in a great measure on the public in general, to make pharmacy what it might be; on the public and the

physician, in as much as they need not entrust the life of the patient to a man in whose skill, knowledge and experience they cannot bestow the necessary confidence; and on the pharmaceutists, who ought to turn their eyes to a proper education, and allow their apprentices the time and means required for obtaining a complete knowledge of all that belongs to pharmacy, and who among themselves ought to cultivate a collegial feeling, forming pharmaceutical associations for a mutual exchange of opinions and observations, and for not being left behind the times, behind the steps of the natural sciences which, in this century, progress so rapidly.

An elaborately written paper, by Mr. Parrish, on "pharmaceutical education," was published some time since in this Journal, and it claims the attention of every pharmaceutist. The noble objects of the "American Pharmaceutical Association" should not be ignored by any one who does or intends to stand on a level with those acquirements that may be properly demanded of a real apothecary. Well educated men, thoroughly acquainted and conversant with all that appertains to pharmacy, cannot fail but to win the entire confidence of the public, and to convince the conscientious observer, that apothecaries are something else besides merely tradesmen, and that *pharmacy is an art and a science.*

(To be continued.)

OLEUM MORRHUÆ CUM QUINIA.

To the Editors of the Medical Chronicle.

GENTLEMEN: As the above preparation has attracted some attention in England, and is frequently prescribed by medical men here, it may not be uninteresting to some of your readers if we describe the process we have found, after some experience, to be most successful.

A short notice of this article appears in the London *Pharmaceutical Journal* of March, 1855, which, however, furnishes no exact formula for its preparation, and merely states that it is a solution of anhydrous quinia in cod-liver oil, prepared by adding the former in fine powder to the oil contained in a suitable glass vessel, and effecting the solution by heating in a water-bath. We have observed, that by the continued application of heat, a

very unpleasant flavor is communicated to the oil; so much so, as to form a serious objection to its use, and have endeavored to avoid this difficulty in the following manner: We dissolve the quinia in a small quantity of strong alcohol, of sp. gr. 0·796, and find that when this solution is mixed with the oil and gently heated in a water-bath, the quinia is dissolved without difficulty, as the alcohol evaporates. By this simple method, a perfectly clear liquid is obtained free from the strong flavor imparted by the ordinary process.

The following is the formula we have employed, obtaining anhydrous quinia:—

Quiniæ Disulph., ℥i.
Aq. Ferventia destill., Oij.

Dissolve the quiniæ sulph. in the boiling distilled water, then add liq. ammoniæ in slight excess, and collect and carefully wash the precipitated quinia. This should be dried on filtering paper, and fused in a porcelain dish, in a sand-bath. Thus obtained, it presents the appearance of resin, being of a dark brown color, translucent and soluble in almost any proportion in fixed oils. We have generally made our solution of the strength of two grains of quinia to one ounce of cod-liver oil, but this may of course be varied to suit the pleasure of the prescriber.

A solution of caustic soda might be substituted with some advantage for liq. ammoniæ, as quinia is slightly soluble in excess of the latter, causing a slight loss, which may be avoided by using the former precipitant.

We remain, Gentlemen, yours truly,
S. J. Lyman & Co.

Place d'Armes, Montreal, July 31st, 1855.

Pharm. Journ., Nov., 1855.

ON THE ADULTERATION OF FOOD AND DRUGS IN ENGLAND.

In July last, a Committee of the House of Commons was in session, "to investigate the subject of the Adulteration of Food and Drugs." The appointment of this committee appears to have grown out of the publication in the "Lancet," of a series of reports on the above subject, under the name of "*The Analytical Sanitary Committee.*" The investigations were chiefly microscopic in their character, but to a certain extent chemical, and

Dr. Hassall, who got the credit of being the chief of the "Commission," professed extraordinary accuracy in determining admixtures of organic matter with the microscope, whilst Dr. Normandy took charge of the chemical essays. According to the Pharmaceutical Journal, both of these gentlemen appear to have been carried away with the idea that pure food and drugs were exceptions, and that adulteration was the rule, and that many of the statements published, give impressions to the public mind very far from the truth. "Dr. Hassall deserves credit for the industry and perseverance with which he has pursued his experiments on adulterations. His weak point, however, is the endeavor to prove too much, and the habit in highly-colored statements *ad captandum vulgus*. The impression of any impartial person, on reading Dr. Hassall's evidence, would be, that the only place in which genuine medicines can be obtained, is Apothecaries' Hall." As there are two sides to every question, so of this, and in the voluminous published evidence, the statements of Hassall, Normandy, and others, are much modified by that of sound practical men, who turn the focus of their inquiries on the market in general, and not in insolated instances of fraud. With these preliminary remarks, we will proceed to extract some items from the pages of the published evidence.—Ed. Am. Journ. Pharm.

"Dr. Hassal stated that he had paid great attention to the subject, and was of opinion that adulteration prevailed in nearly all articles, whether food, drink, or drugs. There were few exceptions. The majority of these adulterations consisted of the addition of articles of greatly inferior value, for the purpose of imparting taste, pungency, or smell. He proposed to treat the subject under three heads: first, as regarded the extent of the practice; secondly, the sanitary bearings of the question; and, thirdly, to show the importance of the microscope for discovering the adulterations, and suggesting such remedies as occurred to him. He would proceed to read to the Committee a list, first, of the various substances ascertained by himself to be employed in adulteration; secondly, a list of articles ascertained by others to be so employed; and then a list of other substances supposed to be used, but of which no positive evidence had been obtained. Among the various articles to be enumerated under the first head was anatto, which was adulterated with chalk, wheat flour, rye

flour, salt, soap, turmeric, ferruginous earths, Venetian red, and red lead. Arrowroot, both East and West India, with sago, tapioca, and various mixtures and combinations of these. Anchovies, by Dutch, French, and Sicilian fish, colored by bole-Armenian and Venetian red. Bread, with mashed potatoes, alum, and various other articles. Coffee, with chicory, roasted wheat, rye, and bad flour and bones. Chicory itself with the same substances, with the addition of Venetian red, umber, &c. Curry powder, with ground rice, red lead, &c. Gin, with water, sugar, cayenne, &c. Mustard, with wheat flour, turmeric, &c. Preserves, with salts of copper (chiefly the acetate,) ground rice, &c. Vinegar, with water and sulphuric acid. Scammony, with wheat flour, chalk, &c."

"Annatto is a coloring substance, and is used largely in dyeing and coloring cheese and milk, butter and cream; it is largely imported, and is a very expensive article. From samples of it, chalk was present in twenty-one, wheat flour in four, rye in nine, salt in nineteen, and an oily substance (probably soap) in seven.

"In twenty-three samples of opium, no less than nineteen were adulterated, chiefly with wheat flour and poppy capsules, while the active principle of the opium was only present in the proportion of one to five. Opium was one of the most important drugs, especially in cholera cases and *delirium tremens*, and it was essential in such cases it should be good. The drugs retailed at Apothecaries' Hall might be taken to be genuine. He had examined four or five samples, and had never met with an adulterated article.

With regard to the adulteration of drugs, it does not often come under the notice of Apothecaries' Hall. They buy in the market the best that can be procured, and although there may be adulteration to a certain extent—which is the case with almost every article—yet the public may be certain of obtaining the purest the market offers. As to opium, none is imported pure. The juices obtained from the poppy will never dry beyond a certain consistence; some leaves of other plants are therefore added to bring it into a cohesive state—this is adulteration in one sense. Everything brought at the "Hall" is tested.

In answer to a question as to whether the variation in the quality of opium might not seriously affect the prescriptions in which it

was an ingredient, the witness said he thought there could be no danger of this, as the average quality was well known. He further stated that all samples of drugs were examined by a committee. Were obliged to grind their own drugs, in consequence of the drug grinders adulterating them during the operation. Was not aware of the composition of the substance called "powder of post." The College of Physician have power to examine and inspect all chemists and druggists' shops, and this power is exercised once a year; but the examination is very cursory, and not sufficiently accurate to be of any benefit. There is an agreement between the Admiralty and the Apothecaries' Society, by which they may examine their establishment at any time, but this power has not been exercised. The Hall supplies the whole of the navy, and half the army, and the East India Campany. Believes Messrs. Savory have the other half.

With regard to Turkey rhubarb, knew that one manufactory at Banbury produced twenty tons per annum. It is very inferior to Turkey, fetching about 4*d.* per lb., while Russia rhubarb is worth 11*s.* 6*d.* Russian rhubarb comes from the Tartar districts, and is monopolized by the Russian Government. It is brought to St. Petersburg by the caravans, and thence exported. It is a great delusion to believe that rhubarb comes from Turkey. The China rhubarb, commonly called the Turkey, is worth about 7*s.* 6*d.* per lb. At the present time the price is very high indeed. Many chemists profess to obtain their drugs from Apothecaries' Hall, but it is not the fact. The Hall does not supply more than seven or eight.

Cod-liver oil is another drug in which there is an immense adulteration. The oil to be obtained at the Hall is from Newfoundland. In the case of the oil being colored, it is owing to the liver of the fish being allowed to putrify. This case of adulteration is most difficult to detect, even to an experienced person. There are certain tests published, but the presence of even 5 per cent. only of the pure oil will yield the require result.

Several specimens of mustard have passed through witness's hands, all greatly adulterated, containing from 27 to 30 per cent. of inorganic matter, such as sulphate of lime. The genuine should give only 4½ to 6½ per cent.—*Pharm. Journ. Aug.* 1, 1855.

(To be continued.)

ON A PROCESS FOR OBTAINING AND PURIFYING GLYCERINE, AND ON SOME OF ITS APPLICATIONS.

By Mr. G. F. Wilson.

The paper I was asked to give was one on our new process of obtaining and of purifying glycerine. I trust, however, you will excuse, as an introduction, a short sketch of the past history of glycerine and its uses, though it will take us over some ground well known to most members present.

Glycerine was discovered in 1789, by Scheele, as a product in the process of lead plaster making, and was called by him the sweet principle of oils. About twenty-five years afterwards it was studied by the father of fatty chemistry, Chevreul, and shown by him to be the base of fats and fat oils. M. Chevreul lately received a specimen of glycerine obtained by our new process, with expressions of extreme pleasure. Nearly half a century has passed since the earliest of those beautiful researches into the constitution of fatty bodies, in the course of which he discovered the function of glycerine, yet our specimen found him still lecturing to his class.

A source of impure glycerine has long existed in the preparation of lead plaster, in which the combination of the litharge with the acids of the olive oil sets the glycerine free; another source in soap-making, the soda or potash setting free the glycerine; and a third source in the stearic candle manufacture, where the lime saponification separates the glycerine. Most of the purifiers of glycerine appear to have preferred this last source.

Notwithstanding the known existence of these great sources of impure glycerine, it was long before glycerine was in any way utilized: hundreds of tons have been and are yearly thrown away.

The first suggestion of a use which we can trace, dates in the beginning of 1844, when Mr. Thomas De la Roche, being engaged on some experiments requiring the use of syrupy substances, procured some glycerine from Mr. Warington of Apothecaries' Hall, some of which he applied to a burn and an irritation of the skin. The experience thus obtained of its properties of soothing and keeping moist, led to its introduction, through Mr.

Startin, into the Hospital for Skin Diseases, where it soon came into extensive use.

In 1846, Mr. Warington took out a patent for the use of glycerine as an agent in preserving animal and vegetable substances, and tried many experiments on preserving meat. He informs me that part of a neck of mutton preserved in glycerine for several months, when cooked by Soyer, was partaken of by a gentleman with great satisfaction.

Mr. Warington, I believe, first applied glycerine in mounting objects for the microscope, for which it has proved so successful.

In the *Lancet* of June, 1849, Mr. Thomas Wakley published the result of a year's experience in a long and very interesting paper on the use of glycerine in diseases of the ear, giving a number of cases in which it had proved a cure for deafness. In the number of the 23d of the same month his results were confirmed by letters from Mr. Erasmus Wilson and Dr. Gardner, the latter of whom drew attention to the fact that glycerine should be free, not only from any trace of lead, but also as much as possible from water. His theory was, however, better than his practice; for the glycerine he speaks of using, sp. gr. 1.280, being above the density of anhydrous glycerine, must have been impure.

Isolated applications of glycerine had thus been suggested; but M. Cap appears to have been the first to see its extraordinary value in a great variety of medicinal preparations. His very valuable and interesting papers were published in the *Journal de Pharmacie et de Chimie*, and translated into the *Chemist*. I shall give two short extracts from them.

M. Cap, in his first paper, (*Journal de Pharmacie et de Chemie*, February, 1854, *Chemist*, April, 1854,) begins by attacking the process of purifying glycerine given in the French chemical books, and shows its defects. He then gives his own process, remarks upon the great value of glycerine in skin diseases, and after suggesting a number of valuable uses, proceeds as follows:—

"Glycerine dissolves the vegetable acids, the deliquescent salts, the sulphates of potassa, soda, and copper, the nitrates of potassa and silver, the alkaline chlorides, potassa, soda, baryta, strontia, bromine, iodine, and even oxide of lead. It dissolves

or suspends the vegetable alkaloids in the same manner as the aqueous liquids, and at the same time the resulting products may be used for the same purposes as though mixed with oil. Thus, the salts of morphia dissolve in it completely, even cold, in all when hot, but when cold, separates into clots, which when triturated with the supernatant liquid, give it the consistence of a cerate very useful for frictions and embrocations. It is the same with the salts of brucine, strychnine, veratrine, and most preparations of the same order, which enables us to consider that we have now, if not medicinal oils with a vegetable alkaloid base, at least a series of new preparations which will fulfil a perfectly analogous use in therapeutics."

M. Cap, in his second paper (*Chemist*, Oct., 1854), states that he employed glycerine of 28 Beaumé, or containing 88 per cent. of anhydrous glycerine, and speaks of it as a solvent of sulphuret of potassium, and sulphuret of lime, of iodine, iodide of sulphur, iodide of potassium, iodide of mercury, of some chlorides, and of quinine, and sulphate of quinine.

In the *Chemist* of February, 1855, Dr. Crawcour, of New Orleans, states that for twelve months past, he had been in the habit of using glycerine very extensively in those cases requiring cod-liver oil, in which the nauseous taste of the latter medicine rendered its exhibition impossible, and that now, in his practice, it had entirely superseded cod-liver oil.

In a paper read at the meeting of the Royal Institution of 30th March, 1855, by the Rev. John Barlow, F. R. S., attention was again drawn to the great preservative power of glycerine upon meat. On this occasion Mr. Barlow showed specimens of flesh which had been immersed, some partially and some wholly, in glycerine, for more than a month. I can answer for the flesh having appeared to be perfectly fresh.

M. Cap, worked upon the waste liquors of soap and stearic candle works, which liquors he had first to concentrate. His process was shortly this: He used sulphuric acid to separate the lime, and continued boiling and agitation to drive off the volatile fat acids, removing any excess of sulphuric acid by means of carbonate of lime; allowing the liquor to cool at different densities, so as to deposit sulphate of lime; and, after final concentration, treating and filtering with washed animal charcoal.

M. Cap's process, though an undoubted improvement, was not perfect, as glycerine so purified is always liable to contain more or less of salts of lime; and some glycerine, purified in our laboratory according to M. Cap's directions, contained in addition volatile fat acids; and though the process was known in this country, specimens of the so-called "pure" glycerine obtained from the best sources in London, so recently as last January, contained in every case more or less impurity.

The best specimen came from Edinburgh; but even this was not absolutely free from impurity. Some medical men appear to have been afraid to prescribe glycerine for internal use, sometimes with reason as appears from the *Chemist* of May, 1855, where Mr. Hamilton, of Liverpool, referring to the papers of MM. Cap and Garot, and of Dr. Crawcour, stated that no doubt the glycerine purified and used by them might be safely used internally; but that having doubts about the purity of the glycerine commonly sold as "pure glycerine," he had procured samples from several of the most respectable Chemists in Liverpool, and on examination had detected lead in considerable quantity, and that the specimen in which he detected the largest quantity of lead was labelled "pure glycerine," was sold at double the price of the common glycerine, and was warranted free from lead.

I will now proceed to describe the new process for obtaining and purifying glycerine, and may remark, that the road by which we arrived at pure glycerine, was rather a circuitous one. Our first step was to do away with the lime process of saponification, and with it our only source of impure glycerine. By our first improvement in separating the fat acids from neutral fats, the glycerine was decomposed by the direct action of concentrated sulphuric acid at a high temperature, and all that remained of it was a charred precipitate. A new process for decomposing neutral fats by water under great pressure coming under our notice, led us to look again more closely into our old distilling processes; and the doing this showed, what we had often been on the brink of discovering, that glycerine might be distilled.

In our new process, the only chemical agents employed for decomposing the neutral fat and separating its glycerine, are steam and heat; and the only agents used in purifying the glycerine

thus obtained are heat and steam. Thus all trouble from earthy salts or lead is escaped.

Distillation, however, purifies the impure glycerine of the old sources.

On the table is a series of products of palm oil, which will serve to illustrate the process. Steam, at a temperature of from 550° to 600° Fahr., is introduced into a distillatory apparatus, containing a quantity of palm oil. The fatty acids take up their equivalents of water, and the glycerine takes up its equivalent; they then distil over together. In the receiver, the condensed glycerine, from its higher specific gravity, sinks below the fat acids. Sufficient steam must be supplied, and the temperature regulated, otherwise the elements of the glycerine do not take up their equivalents of water, and acroleine is evolved—a body of a very different character, an acrid eye inflaming vapor, appreciated only by those who have had the misfortune of an experimental acquaintance with it.

In an ordinary apparatus the glycerine distilled from the neutral fat is not in a sufficiently concentrated state for most purposes; it should therefore be concentrated, and, if discolored, be redistilled. It is then obtained, in the state of the specimen on the table, at the temperature of 60° Fahr.; it is of sp. gr. 1·260, or to contain 98 per cent.

I have now to mention some uses for glycerine, which I believe to be new, or to which I have seen distilled glycerine applied.

A possible use which appears worthy of experiment is to inject it into the bladder, for the purpose of dissolving calculous deposits; from its blandness it should not cause irritation, while, as it is a solvent of urea and phosphate of lime, it might dissolve them when in the bladder. Some of the high authorities have received glycerine for the purpose of the experiment.

The use of glycerine in photography having been suggested, some distilled glycerine has been sent to several of the best photographers and makers of photographic preparations. It was very well received, and considered to promise well, and is still the subject of many experiments; but as yet it does not appear that any great results have been arrived at. It is, however, expected to supersede the honey and Shadbolt's process.

The properties of soothing and keeping moist the skin have caused it to be used upon chapped hands and sun-burnt faces. It has been proposed as a substitute for syrup in preserving fruits. Mixed with alcohol or pyroxylic spirit, it has been proposed by Mr. Warren De la Rue, as an economical fuel for spirit lamps.

For some time past, in Edinburgh as in London, it has been used in skin diseases; it is now being tried in some cases of diseases of the mucous membrane of the stomach.

We have been informed that in the preparation of several medicines glycerine may be substituted for syrup or sugar, with the effect not only of preserving the medicine in an active state and free from change, but also of very greatly improving its taste. Griffith's iron mixture has been mentioned to us as an instance of this.

Glycerine appears to give the means of preservation of some objects of natural history without change in their color. This is shown by the specimens of fish upon the table. Our first experiment was upon a brilliantly-colored two pound trout, caught in one of the Perthshire lochs. Immediately on taking it from the water I poured a quantity of glycerine over it, and wrapped it in a cloth. At night the fish was cleaned and immersed in glycerine. Next day it was again wrapped in a saturated cloth. On examining it a day or two afterwards in Edinburgh, the color on the scales was unchanged. When it arrived in London, part was steeped in water and then cooked. Though perfectly fresh and firm, it had lost almost all its flavor; the uncooked portion was immersed in glycerine, and sent to Professor Owen, who suggested that the brilliantly-tinted fishes of the Coral Islands and tropical coasts might be brought home in kegs of glycerine.

On the table are specimens of trout, roach and perch, which have been, the trout more than two months, the perch and roach more than one month, in their bottles. It will be seen that the colors continue bright.

I may now state, in conclusion, that though a variety of uses, actual and possible, for pure glycerine have been mentioned, yet when we consider its power as a solvent, and at the same time its blandness, and freedom from all irritant, exciting, acid, and fermenting properties, we must feel that not a tithe of its uses have yet been developed; and that in glycerine there is a wide

field opened, requiring many scientific and practical laborers, and which, once fully worked, will yield a ten fold crop of uses. Pure glycerine will then take its proper place among the most valued of modern products; and, produced, as it will be, in great quantities, it will be recognized in the arts as well as in medicine, as a new, real blessing to mankind.—*London Pharm. Journ.*, Nov., 1855.

BLANCARD'S PILL OF THE IODIDE OF IRON.

Five years ago, M. Blancard, a pharmacien of Paris, proposed an unchangeable pill of the iodide of iron, made directly from its elements, which was officially approved by the French Academy of Medicine. The excellence of this preparation was generally acknowledged, and it is already, in France, the most common form for the administration of iodide of iron. Our pharmaceutical authorities at Philadelphia, however, adhere to the saccharine solution which Dr. Jackson introduced many years ago, and Prof. Bache declares that solid iodide "might well be dispensed with." Practitioners will differ sometimes from the chemists, and so it has proved in this case. It is found that, notwithstanding the assurances of the self-constituted authorities, the syrupy solution of iodide of iron *does* undergo change: that it often injures the teeth, disagrees with the stomach, and contains free iodine. Consequently, as our dispensatory-authors and colleges of pharmacy simply advise us, if we must have a pill, to evaporate their syrup, or to use the antiquated and unreliable process of Calloud, practitioners have found it of advantage to import M. Blancard's preparation, which is now very commonly prescribed, not only in New York and Boston, where there are agencies for the sale of it, but in many remote country towns. And here we may take the liberty of recommending to the gentlemen who have taken on themselves the direction of pharmaceutical matters in this country, that they should not be too dictatorial or dogmatic, if they expect to retain the authority which has been conceded to their talents and learning.*

* [Before our cotemporary of the Virginia Medical and Surgical Journal suffered himself to be delivered of the above unjust reflexions, he should have examined the subject a little more closely. Twelve years ago, Mr.

With these preliminaries, we give at length the process for preparing Blancard's pills, which we take from the *Bulletin de l' Académie de Médicine.* It is founded on the volatility of ether, and the insolubility of the iodide of iron in this vehicle:

Take of Iodine *seventy-seven grains;* Iron filings *thirty-seven grains;* Distilled water *two and a half drachms;* Honey *one drachm and thirty-four grains;* Absorbent powder (say powder of Althæa) *a sufficient quantity.* Make 100 pills.

Place the water, iodine, and iron in a Florence flask; shake the vessel as the reaction takes place; filter the green liquor that results, into a small iron capsule, the weight of which is known. Wash the flask, and filter with two and a half additional drachms of water, slightly sweetened with a portion of the honey to be used in making the pills. Pour both liquids into the capsule, and evaporate, at first rapidly, then at a gentler heat, until the weight of the mixture is equivalent to the combined weight of the iodine and honey (171 grains, or ʒiij. nearly). Add a sufficient quantity of powdered althæa root, or, still better, equal parts of althæa and liquorice powder, about ʒij. Divide the mass into four equal parts; roll each part in powdered iron. Make each mass into a cylinder on an iron slab; divide each cylinder into twenty-five pills, and roll each pill in powdered iron, to cover the iodide exposed by the spatula. Expose the pills to a gentle heat that they may contract no moisture, and

Worthington, of Philadelphia, published an excellent formula (see vol. xv. page 71 of this Journal) for pills of iodide of iron. This is noticed in the Dispensatory along with others. The remarks there made of the ineligibility of solid iodide of iron for extemporaneous prescription, refers to the salt itself and not a solid preparation of it like Blancard's pills, and Dr. Bache very properly says, if a pill is wanted, get it by evaporating the syrup—or a syrup. What are Blancard's pills but a *honey* syrup of iodide of iron evaporated and rendered pilular by althæa, rolled in powdered iron and varnished? The suggestion to use powdered iron along with solid iodide of iron in pills we long since made, and others have done likewise. Further, Blancard's pills are not unknown in Philadelphia, and are prescribed by some of our physicians, but the majority very properly think that syrup of iodide of iron is to be preferred as a *pharmaceutical form* of this agent, and they claim to hold their honest opinion without being obnoxious to the charge of being "dictatorial or dogmatic."—Ed. Amer. Jour. Pharm.]

proceed at once to the second part of the process—varnishing the pills.

Make a solution of balsam of Tolu in three parts of ether. Place the pills in a porcelain capsule, pour on them a portion of the ethereal tincture, and impress a rapid movement of rotation, that the pills may be moistened on every side, and that the ether may evaporate rapidly. As soon as the pills begin to stick together, throw them on a dry surface, separating those that are agglutinated and leave them exposed to the air for twenty-four hours; then dry them over a stove at a gentle heat.

It is well to give them a second coating of varnish. Blancard puts them in a bottle with a stopper covered with silver, which is at once tarnished by the vapor of free iodine.

Each pill contains about one grain of iodide of iron, and one-fifth of a grain of powdered iron on its surface. Two to four pills daily is the ordinary dose in chlorotic, scrofulous, tuberculous, and syphilitic diseases. C. E.

Virginia Medical and Surgical Journal, Oct., 1855.

ON THE IDENTITY OF SANGUINARINE AND CHELERITHRINE, AND ON THE DIRECT DETERMINATION OF NITROGEN.

By Dr. James Shiel, of St. Louis, Mo.

I have used a small portion of hydrochlorate of Chelerithrine which I received in 1843 from my friend, Prof. H. Will of Giessen, and which the discoverer of that alkaloid had prepared himself, to make a few analytical experiments as to its composition.

As the salt was not found to be free from impurities, it was dissolved in water, precipitated by ammonia, washed, dried, dissolved in ether, the filtered solution treated with animal charcoal, and the chelerithrine precipitated with a solution of pure sulphuric acid in ether; the sulphate of chelerithrine was washed with ether, dried and dissolved in water, when it yielded with ammonia a precipitate of pure Chelerithrine, which absolutely showed the same properties and behaviour as Sanguinarine.

Of the pure substance dried at 105° C.,

0.356 grammes burned with oxyd of copper and oxygen, fur-

nished 0.918 carbonic acid = 70.34 per ct. of carbon and 0.167 water = 5.21 per ct. of hydrogen.

The direct determination of nitrogen gave 5.07 per ct.

0.3925 gramm. of the double salt of the hydrochlorate of chelerithrine and chlorid of platinum: thence the atomic weight = 341·74.

Accordingly the composition of Chelerithrine is:

Carbon, - - - -	70.34
Hydrogen, - - - -	5.21
Nitrogen, - - - -	5.07
Oxygen, - - - -	19.38
	100.00

The composition of Sanguinarine I found:

Carbon,	70·03	69·82	70·02
Hydrogen,	5·27	5·08	
Nitrogen,	5·23		
Oxygen,	19·14		
	100·00		

The atomic weight was found in three determinations 322·7; 362·7; 346·4, or taking the mean = 343·9.

From all this it appears that Chelerithrine and Sanguinarine are one and the same substance corresponding to the formula $C_{38}\ H_{16}\ NO_8$. This formula gives:

Carbon, - - - -	70·80
Hydrogen, - - - -	4·97
Nitrogen, - - - -	4·35
Oxygen, - - - -	19·88
	100·00

It will be perceived that the above formula includes one equivalent of carbon more than the one I formerly deduced from the analysis of Sanguinarine.

For the preparation of one or the other of these alkaloids the following method is the simplest and cheapest.

Digest the root of the plant Sanguinaria Canadensis (or Chelidonium majus) with water strongly acidulated with sulphu-

ric acid and precipitate with ammonia, wash and dry the precipitate, dissolve in ether, and treat with animal charcoal. After filtration the alkaloid is precipitated with a solution of pure sulphuric acid in ether. It is pure sulphate of sanguinarine.—*Silliman's Journal, Sept.* 1855.

ON THE USE OF APIOL AS A SUBSTITUTE FOR QUININE.

(Taken from the Reports of MM. JORET and HOMOLLE to the Society of Pharmacy of Paris, and from the Experiments of Professor BOUCHARDAT.)

We have already,* whilst alluding to the discussions on the various substitutes for quinine, spoken of the peculiar principle of parsley, which has been called *apiol.*

The paper on this new febrifuge, presented by Drs. Joret and Homolle, was, without doubt, the most valuable and important work which came before the society of pharmacy during that year. In a chemical and pharmaceutical point of view, said the honorable reporter of the commission, this memoir presents subjects of great interest, inasmuch as we are made acquainted with a new liquid product, extracted by a peculiar process from one of the most common and familiar of our plants, and endowed with properties so singular, as to separate it almost from any known chemical group. But the attention of the commission was more particularly drawn to the medical uses of the new remedy. The authors reported in detail one hundred and thirty-seven observations of fevers treated with the decoction of parsley seed, or with the apiol which is the active principle of this seed, of which number there were only five unsuccessful cases.

The commission of the society of pharmacy deemed it best to authenticate by every possible means, the favorable report on this new agent. They selected the various points where new experiments were to be conducted, and by the advice of the army board of health, the cities of Rome, Ajaccio, Perpigan and Rochefort were chosen, as being in countries where intermittent fever was endemic, and frequently resisted even the use of quinine. The result of the experiments made at these points, give the proportion of cures as only *forty-two* per cent. This proportion, whilst it is far below that derived from the quinine

*Annuaire de Therapeutique, 1853.

under like circumstances, proves at the same time that the apiol does possess a certain antiperiodic value. None of the many substitutes for quinine boasted of at this day, have given a greater number of cures under similar circumstances. Far from rejecting apiol because it does not possess every possible virtue, we should experiment anew, and study patiently, and without any prejudice, all of its therapeutic qualities, and thus establish with accuracy its relative position with regard to the various salts of quinia. It might be then demonstrated, that whilst apiol could not be regarded as a complete substitute for quinia, yet, that it would greatly reduce the consumption of that costly agent, and under favorable circumstances, would answer the same purpose.

The society of pharmacy have thus reasoned in rewarding the authors of the memoir, and engaging them to continue their researches. Drs. Joret and Homolle prosecuting their task, have published a new essay on apiol as a substitute for quinine. In making this examination, they have followed the programme laid down by the society, and constantly compared the therapeutic value of apiol with the sulphate of quinine. Classifying intermittent fevers according to their degrees of violence and obstinacy, and recapitulating the various rules which ought to guide the practitioner in the administration of any febrifuge remedy, they relate the cases in which this organic product gave the most favorable results; those where the results were only moderately successful; those where no effect was observed; and lastly, from the accumulation of clinical facts collected by many reliable observers in different countries and climates, they have ascertained the actual antiperiodic value of apiol, and its relative value when compared with the sulphate of quinine. In this way they have arrived at the following conclusion:—

Apiol whilst it does not take the place of the sulphate of quinine in the intermittent fevers of hot climates, can be very well substituted for the quinine in the intermittents of more temperate latitudes, as for instance in France.

We proceed to give our readers some extracts from this second memoir, which we think interesting and valuable.

The various products which were obtained by MM. Joret and Homolle from the parsley seed are as follows:

1st. Apiol, the active principle. Under this name we wish to include all of that botanical species whose extracts approach the oils in their characteristics, without at this time, endeavoring to point out to what class of chemical compounds they should be definitively attached.*

2d. An essential volatile oil.

3d. A fatty crystallizable matter, solid at an ordinary temperature, but becoming fluid at 25° centigrade, which we have called the *butter of parsley*.

4th. Pectin, a vegetable jelly capable of furnishing pectic acid, and the pectates, under the influence of the alkalies. This is without doubt the apiine of Bracconot.

5th. Chlorophylle.

6th. Tannin; a yellow coloring matter; ligneous matter and non-organic salts which have not been isolated.

The method of extracting Apiol.—Apiol is obtained by treating parsley seed pulverized with alcohol (at from 70° to 80° per cent.) A certain amount of the powder is put in an apparatus for displacement. When it is sufficiently exhausted, the liquor collected is deprived of color by passing it through a bed of animal charcoal, and then distilled into a vessel holding about three quarts of alcohol. The residue is reabsorbed by ether or chloroform, and separated by a second distillation. Heat is applied until all traces of these menstrua are driven off, and then the product is mixed by trituration, with one-eighth of its weight of litharge, and left to stand forty-eight hours. After which it is filtered through a light bed of charcoal, and the apiol is obtained pure and colorless.

Physical Characters.—Apiol presents the appearance of a yellow liquid; oleaginous, staining paper like any other fatty body, although heat will drive off the stain, which will brown before the rest of the paper, and lose its transparency. It has a special and tenacious odor, which is somewhat like the pulverized seeds, but differs from the essential oil, which has a terebinthine smell,

*Might not this chemical group consist of the different organic products which have been extracted from the seeds of many of the umbelliferous plants, and which are similar to apiol in their physical and chemical characters; anisol, cariol, cuminol, &c.; extracted from the seeds of the anise, caraway and cumin?

the taste is acrid and biting, and increases in strength after being held in the mouth.

Chemical Characters.—Apiol is soluble in alcohol of from 50° to 90°, in ether and in chloroform in every proportion. It yields nothing to boiling water. Potassium when thrown into apiol throws off rapidly a multitude of little gaseous bubbles, which would lead us to suppose that this substance was not as it has been supposed, a carburet of hydrogen, but that oxygen entered into its composition.

Physiological Action.—Apiol, in doses of from seven to fifteen grains, produces a cerebral excitement, very similar to that caused by coffee. One feels a sensation of vigor and composure, with a momentary warmth about the stomach. Persons who have taken it in these doses, complain neither of thirst, or pain in the stomach, nausea, vomiting, colic or diarrhœa. When the dose is larger, from thirty to sixty grains, we observe all the phenomena of an intoxication; flashes of light; giddiness, stumbling, vertigo and ringing in the ears, &c., &c. These are the effects produced by a large dose of the sulphate of quinine. The apiolic intoxication is precisely similar to the quinine intoxication, and this is the most remarkable point of resemblance between these two bodies. It is only in exceptional cases that borborygmus or colic has resulted from its use.—*Virginia Med. and Surg. Jour.* Nov. 1855, *from Annuaire de Therapeutique.*

ON CHLOROPHYLL.

By Prof. Mohl.

An article on the *Botanische Zeitung*, for February last, is reproduced by Henfrey, in an English translation, in Ann. and Mag. Nat. Hist. for May and June, 1855. With the thoroughness which characterizes Prof. Mohl's researches, he first combats, apparently with complete success, Nageli's view of the utricular nature of chlorophyll-granules, showing that they have no investing membrane distinct from the contents, still less a cellulose coat comparable with the cell-membrane. He still believes that the grains of chlorophyll do not belong to the ternary series of products at all, but consist of a soft proteinous substance, related to albumen, in which in most cases one or more starch-grains are imbedded, and which owes its green hue to the presence of an

extremely small quantity of green coloring matter, seemingly deposited only or principally in its outer layer. By demonstrating the concurrence of chlorophyll in cells which contained no starch, or the growth of the green globules after the starch-grains have vanished, and in other cases the simultaneous increase of starch and chlorophyll grains in the same cells, Mohl has shown the groundlessness of Mulder's hypothesis, that chlorophyll is formed of starch altered by deoxydation, and that the evolution of oxygen by green foliage is merely the result of this supposed transformation of starch into green coloring matter and wax; and he maintains that, by appropriate evidence, he has abundantly demonstrated the principal mass of chlorophyll-grains to consist of a substance allied to protoplasm, which certainly cannot originate from a metamorphosis of the constituents of starch.—A. G. *Silliman's Journal, Sept.* 1855.

ON HYDRATED SILICA AND SILICATE OF AMMONIA.

By J. Liebig.

According to some experiments of Liebig, the solubility of silica in water depends essentially upon the circumstance whether or no a sufficient quantity of water for its solution is present at the moment that it is separated from an alkaline silicate. If a sufficient quantity of water be present, a much larger quantity of silica dissolves than when water is saturated with gelatinous silica.

If a solution of soluble silicate, the strength of which per cubic centimetre is known, be gradually diluted with measured quantities of water, a point may be arrived at when, on the addition of an acid (muriatic acid) in slight excess, the fluid remains perfectly clear, and no silica is separated. From experiments it appears that by this process water will dissolve as much as 1-500th of silica.

Ammonia, like carbonate of ammonia, diminishes the solubility of silica in water; for when a few drops of ammonia have been added to the solution above described before the addition of acid, a fluid is obtained, which does not remain clear, but becomes opalescent, and finally gelatinous. Muriate of ammonia produces the same effect. A solution of carbonate of ammonia,

added to the above-described clear fluid after the addition of the acid, even when this has been diluted with double the quantity of water, causes it to become opalescent, and even to coagulate. The former appearance is produced even after the addition of a few drops of the solution of carbonate of ammonia; the latter, when the quantity added amounts to about one-eighth of that of the solution of the silicate.

From Liebig's experiments it appears that no chemical compound of silica and ammonia exists; the ammonia found by Struckmann in gelatinous silica is retained by this in the same manner as by porous bodies, such as alumina.

Way has observed (Journ. Agric. Soc., xii. p. 124) that clay, which, as is well known, absorbs ammonia, also possesses the power of extracting the ammonia from water containing it. This property, says Liebig, explains why drainage-water seldom, if ever, contains traces of ammonia; the ammonia is not washed out of fields with a clayey soil. Way has explained this by the supposition, that ammonia, like lime, is capable of entering into the composition of the double silicate of alumina and lime contained in the soil, by displacing the lime; he has also expressed the opinion, that such double silicates of alumina and ammonia furnish plants with the ammonia required for the production of their nitrogenous constituents. Liebig expresses himself very decidedly in opposition to this explanation of the fact, the silicates of alumina absorbing ammonia like other porous bodies, (*sea-sand*, *abestos*, Faraday), and also against this supposed source of nitrogen for plants.—*Chem. Gaz. Oct.* 1, 1854, *from Liebig's Annalen.*

ON NITROGLYCERINE OR GLONOINE.

By J. E. De Vrij.

Nitroglycerine was first employed in medicine in America, under the name of glonoine. The author, who repeatedly paid attention to this body since its discovery by Sobrero, gives the following prescription for its preparation, which he has found most successful. 100 grms. of glycerine, of spec. grav. 1·262, dried at 302° F., are poured gradually into 200 cub. centims. of monohydrated nitric acid, which is to be cooled to 14° F. by a

freezing mixture; care must be taken that the mixture does not become heated above 32° F. As soon as the two bodies have united into a homogeneous fluid, 200 cub. centims. of concentrated sulphuric acid are added in small quantities. If the temperature be constantly kept below 32° F., there is no danger of the mass going off in vapor, but this readily takes place if it rises above this point. The nitroglycerine then separates in the form of an oily stratum upon the acids, from which it is separated by means of a funnel furnished with a cock.

The weight of the quantity obtained was 200 grms. By mixing the separated acids with water, 20 grms. more were obtained. This whole quantity of 220 grms. was dissolved in as little ether as possible, and the solution was agitated repeatedly with fresh water until this no longer reddened litmus-paper; it was then evaporated on the water-bath, and the product was dried until its weight became constant. It then weighed 184 grms.

From this it appears that the constitution of nitroglycerine is $C^6 H^6 (NO^4)^2 O^6$; thus $C^6 H^8 O^6 = 92$ and $C^6 H^6 (NO^4)^2 O^6 = 182$. It is a pale yellow oleaginous fluid, of spec. grav. 1·595 to 1·600 at 59° F. When heated to 330°, it is decomposed; this takes place with a strong explosion at a higher temperature. It also explodes when struck with a hammer upon an anvil. Sulphuretted hydrogen reacts upon it, with deposition of much sulphur.—*Chem. Gaz., Oct.* 15, 1855, *from Journ. de Pharm. et de Chim.*, 3 ser. xxviii. p. 38.

CONTRIBUTIONS TO TOXICOLOGY.

Translated from the "Archiv. d. Pharmacie" and "Buchner's N. Repertorium."

By J. M. Maisch.

Poisoning by a large quantity of Opium cured by Ammonia.

Costa di Serta, Jr., reports to the Paris Academy of Medicine the following case:

Sixty grammes laudanum, equivalent to three grms. opium, were taken and remained in the stomach for six hours, without causing death. Costa thinks this is due to the large dose of opium which almost instantly caused palsy of the stomach, which rendered the absorption of most of the poison impossible. A few

drops of aqua ammonia given in a glass of water, caused a copious vomiting, restoring the functions of animal and organic life. As soon as vomiting ceased, all the symptoms of poisoning re-appeared. Another dose of ammonia caused more vomiting, the cessation of which was again followed by the symptoms of poisoning. Giving ammonia was continued until vomiting, which always followed it, had cleansed the stomach of all the opium.

In this case ammonia acted as an emetic, and at the same time as an excitant on the nervous system, and consequently if not the best antidote against narcotics, it is the first remedy that ought to be administered in such cases.—(*Gaz. Méd. de Paris*, 1855, *No.* 9.

Poisoning by Lyon's Rats' Pills.

On the evening of the 20th of October, a child of sixteen months took four or six of Lyon's pills; the frightened parents immediately administered the white of an egg stirred in milk; about two hours afterwards a violent vomiting and purging set in, together with cramps of the stomach, and although the first afterwards ceased, the purging continued, so that the child could not retain anything on the stomach. The stools were slimy and inodorous. A physician who had been called in, desired to know whether there was any metallic poison present; a few experiments hastily made showed the absence of phosphorus and heavy metals. An emulsion of ol. amygd. dulc. was given, and a few hours afterwards the purging lessened, and then the belly was more inflated than before; another emulsion combined with syr. rhei. and aq. amygd. amar. was prescribed, and about thirty hours after taking the poison the child was recovered so as to require only a mild tonic to complete the treatment.

This case shows that Lyon's pills are not so innocent to human beings, and they certainly require in their use some caution.

Poisoning by Light-Gas, by Dr. Cluss.

In a damp room of a house in a narrow street in Stutgart, there lived a married couple, twenty-nine years of age. Through a leak in an underground gas-pipe in the street, gas escaped, which, unable to penetrate through the frozen ground, found its

way into the room, where it could be recognized by the smell. On December 31st, both were seized with stupefaction, connected with and increasing to headache, somnolency, unconsciousness, vomiting, general weakness, red and turgent face. These symptoms lasted until January 3d, when the woman, who had been nursing her husband, had to go bed, and soon after was found by the neighbors unconscious. Two persons volunteered to watch all night, and were found highly stupified the next morning. Bleeding was ordered, the blood run very slowly, was thick, black, tar-like. All four persons were taken to the hospital.

The brother-in-law, twenty-four years old, lay stretched out, was unconscious, eyes closed, violent spasms of the vertebral extensors, high degree of low-spiritedness, intense chilliness, pale face, fixed, wide pupils (as after belladonna), bloody froth on the mouth, rattling quick breathing, pulse 130, soft, beating of the heart imperceptible, extremities cold, elbows inflexible. Treatment: Bleeding on the arm, only two ounces of dark blood obtained, coagulating into a hard cake of the usual color; mustard plasters, cold fomentations on the head, acetic ether, slow recovery till the sixth day. The other friend, a female, twenty-nine years old, answered to all questions right, but slowly, eyes open, pupils normal, breathing quick, chilliness, skin cold, limbs moveable, but lax; after she went to bed natural heat and sleepiness. Treatment: Ice on the head and mustard on the chest; recovery on the third day. The husband and his wife were conscious, remembered all that had occurred, and recovered within a few days.—(*Wurtemb. Corresp. Blatt*, 1854, 45.)

The "Sedra" of California, by Dr. K. Precht.

The "Sedra," so-called on account of the resemblance of its leaves to those of the ivy, is similar to the Rhus toxicodendron, and belongs to the same genus. From June to October the leaves are of a greenish orange to red color, and then their poisonous properties are the most intense. The touch of the leaves, the smoke of the burning plant, is sufficient to cause the following symptoms: Tension, heat, swelling, pricking, redness, a complete inflammation, then dizziness of the head, weariness, chilliness and

heat, fuller and quicker pulse, red tongue, thirst and nausea, eye-lids and genitals swelled, the swelling of the face resembles erysipelas, often with blisters or pimples, secerning a serum, which soon become turbid, dries to a brown scurf or scales, and causes an insufferable burning and itching. Now gastric symptoms appear, brown covered tongue, sometimes dry and cracked, violent thirst, quick pulse, which sinks, accompanying a soporous sleep, the highest state of this poisoning, which has never proved fatal. Very often an itch-like eruption remains on the inner side of the extremities, on the scrotum and perinæum, sometimes lasting for four or six weeks, until by blood-purifying medicines and chiefly baths all the poison has been eliminated. With children and decrepit subjects often furuncles arise on the lower extremities and neck, and little ulcers containing much matter; they must be opened, heal up and are then replaced by others. Treatment: In the beginning an emetic, soap-baths, washing with chloride of lime and aq. ammonia, cooling purgatives, then Dover's powder. Thus the poisoning symptoms are effectually cut off, but not always the following troublesome diseases.—(*Buchner's N. Repert.*, iii. 7.)

Reaction of Nux Vomica, by Dr. Schlienkamp.

Nux vomica, extracted with diluted alcohol, lime-water or distilled water with a little sulphuric acid, and evaporated between 35 and 40° C. (95 to 104° F.) leave a crimson red residue, the former two after an addition of a little sulphuric acid. Half a grain powdered nux vomica with three or four grs. conchæ ppt. a few drops of water and sulphuric acid produce at the above temperature the same red, but lightened by the grayish white of the conchæ. The red color in all cases disappears on cooling after ten or fifteen minutes. This reaction may be observed several times by heating and cooling, until the carbon produced by the repeated heating dims the color to indistinctness. The same reaction will be had with the faba St. Ignatii.

Brucia and strychnia do not show these reactions. Salicin is colored red by concentrated sulphuric acid, but the color does not disappear in ordinary temperature.—(*Archiv. d. Pharm.*, 1855, *Feb.*)

ON TARTRATE OF LIME AND A REACTION OF TARTARIC ACID.

By Arthur Casselmann.

The author, when occupied in the examination of Alexandrian senna, found that the aqueous extract deposited the lime salt of an organic acid on evaporation. This salt possessed a remarkable property; when gradually heated, after the addition of ammonia and nitrate of silver, it covered the sides of the test-glass with a metallic speculum of silver, in such a manner that the reaction may be compared with the reduction of nitrate of silver by aldehyde-ammonia. Even a very small quantity of the lime-salt was sufficient to reduce the nitrate of silver in the manner above-mentioned, but only when the nitrate was added in small fragments, instead of in solution. If it were added in solution, the reduced silver was deposited in the form of a gray powder.

When the hot solution of the lime-salt was mixed with neutral acetate of lead, an abundant white precipitate was obtained, which however always contained traces of the lime-salt, unless the fluid was rapidly altered whilst boiling. This precipitate was decomposed by sulphuretted hydrogen; the fluid containing the pure acid was evaporated, and the acid was obtained as a syrupy sharply-acid fluid, which exhibited no trace of crystallization even after standing for several weeks.

The author analysed the lead-salt of the acid; it had the composition of tartrate of lead. Analysis gave:—

C	13·5	8	= 48·0	13·5
H	1·5	4	4·0	1·1
O	22·7	10	80·0	22·6
PbO	62·3	2	223·2	62·8

Comparative experiments with artificially-prepared tartrate of lime presented the same behaviour. The remarkable fact, that tartaric acid, in one of its least soluble compounds, possesses the property of instantaneously reducing nitrate of silver, might be made use of in analysis for the detection of minute traces of this acid. Racemic acid, however, gives the same reaction, and also produces it instantaneously only when the nitrate of silver is added in the solid state.

Tartrate of lime occurs in considerable quantity in senna-leaves; but, from its sparing solubility, is not obtained from them

without difficulty. The author has made experiments upon the solubility of tartrate of lime, and found that this salt requires for its solution 850 parts of boiling, and 1210 parts of cold water.

The author also boiled tartrate of silver with ammonia, to ascertain whether, as stated by Werther, a new ammoniacal salt is thus produced. He was unable to find anything of the kind. —*Chem. Gaz., Oct.* 15, 1855, *from Archiv. der Pharm.*

ALLEGED ADULTERATION OF ANNATTO.

Mr. Redwood, in the absence of any formal paper for the evening, made some remarks on the subject of annatto, and the statements which had recently been published with reference to its use and alleged adulterations. His object in bringing the subject forward on this occasion was principally to elicit information. He had been requested by some parties engaged in the commerce of this article to make a thorough investigation of the questions relating to its production, preparation and use, with the view of correcting what these parties conceived to be very erroneous representations which have been made to the public. He was enabled, by means partly of specimens from the Museum of the Society, and partly of specimens obtained from other sources, to illustrate the different varieties of annatto as met with in commerce, and to point out their different properties.

Annatto, he stated, is a coloring matter derived from the seed of a plant, the *Bixa orellana*, which is a native of the West India islands, South America, and the East Indies. It is in South America, however, that the coloring matter is principally manufactured. There are two kinds of annatto imported into this country, namely:—

1. *Spanish annatto*, which is made in Brazil, and comes chiefly from Para, in baskets each containing thirty or forty pounds weight; and,

2. *Flag or French annatto*, which is made in French Guiana, and especially on the island of Cayenne, from whence it is exported in casks, each containing several hundred pounds.

These two varieties of annatto, differ considerably from each other in some of their characters and properties. Flag annatto

has a very disagreeable, somewhat putrescent smell, from which Spanish annatto is entirely free, the smell of the latter, when fresh and good, being rather agreeable than otherwise. But while Spanish annatto has a decided advantage over flag annatto in regard to this character, it is nevertheless inferior to flag annatto as a dyeing or coloring agent.

There are two processes described as those adopted in the manufacture of annatto. The seeds from which the annatto is obtained are red on the outside, but perfectly white within. One of the processes consists in rubbing and washing off the coloring matter from the surfaces of the seeds with water, then allowing the coloring matter to subside, and exposing it to spontaneous evaporation, until it acquires a pasty consistence. The other process consists in bruising the seeds, which contain albuminous and farinaceous matter, as well as the coloring principle, mixing them with water, and then leaving the mixture to ferment, during which operation the coloring matter collects at the bottom of the vessel, from which it is subsequently removed, and brought to the proper consistence by spontaneous evaporation. It is probable that the disagreeable smell of flag annatto arises from the adoption of the latter process, the fermentation being carried to the putrefactive stage. It is possible, also, that the superiority of the coloring matter in flag annatto may be due to the influence of fermentation.

In applying either of these processes in the countries in which annatto is made, the products are liable to great variation in quality, no two samples being precisely alike. The inspissation of the pasty mass is said to be effected by exposing it to the air in shady places; but if too long exposed to the air the color is injured by the action of light, and if not sufficiently inspissated, it undergoes injury from the action of the retained water. It is obvious, too, that in carying out such a manufacture in the rude way in which it is likely to be conducted in those countries, there would be constantly varying proportions of the true coloring matter, and of starch, woody fibre, and other worthless constituents or impurity, contained in the annatto. Much of the annatto, as imported into this country, is in such an imperfectly inspissated state, that it cannot be kept for many months without

undergoing decomposition, often becoming filled with maggots, and rendered wholly unfit for use.

There are several different applications which are made of annatto. It is used, and this is probably its most extensive application, for dyeing silk and wool. It is said to be inapplicable for dyeing cotton. It is used by the Russians for staining the Russian leather. It is employed as a coloring agent in some kinds of varnish. It is also used for imparting color to cheese, butter and some other articles of human food. For some of these applications the annatto requires to be specially prepared for that particular purpose. In the state in which it is imported, it does not yield its color to water, but the coloring matter must be rendered soluble in water in order to be applicable for the coloring of cheese. If it be used for coloring varnishes, this preparation is not required or even available; but it has to be prepared in a different way. Hence, annatto is one of those imported articles which, before it goes into the hands of the retail dealers, is subjected to certain processes, by which it is fitted for the particular uses to which it is to be applied. One of the objects of thus preparing annatto for commerce, is to render it less liable to undergo decomposition than it would be in the state in which it is imported. In preparing annatto with these objects, certain additions are made to it. Substances are added, some of which are intended to prevent decomposition, and others to develope the color required, and make this soluble in the menstrua by which it is to be applied. Annatto prepared for coloring cheese has an alkali added to it, and it is either made into the form of a clear liquid of a dark yellowish-brown color, or of a stiff paste, unalterable by keeping, and the color of which is readily soluble in water.

[Mr. Redwood's further remarks had reference to the statements of Mr. Hassell, Dr. Normanby, and others, in reference to the adulteration of this article, with chalk, flour, turmeric, salt, soap, red ochre, copper and red lead, which he believed had caused an erroneous impression, calculated to injure honorable dealers.]

Pharm. Journ. Nov., 1855.

ON SODIUM AND ITS MANUFACTURE.

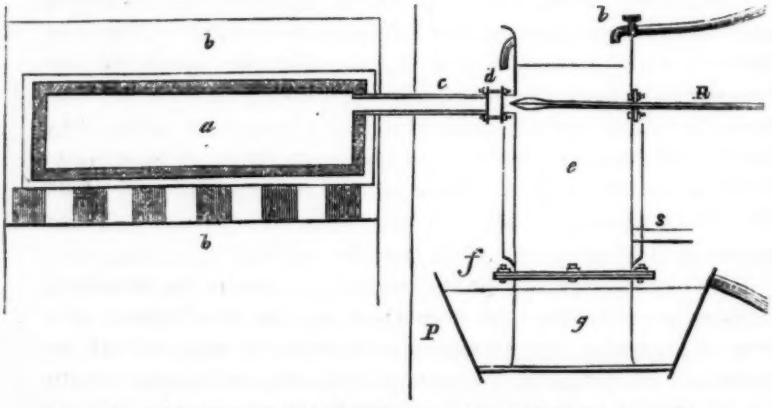
By William Beatson.

Having for some years given considerable attention to the production of the alkaline metals, I have succeeded in obtaining them (particularly sodium) in such quantities, as to show that it only needed the demand to be created, and they could be supplied in such a way, as would greatly promote the application and extension of science and the chemical arts, and it was only because that demand did not appear to exist, that the subject was allowed to remain in comparative abeyance. Now that such interest has been excited in the enlarged application of Mr. Wöhler's process, for preparing aluminium by means of sodium, chiefly through the exertion of M. St. Clair Deville, it may not be uninteresting to indicate the means by which this latter metal, sodium, may be extracted by enlarged and improved processes, which I have been led to employ for some time past.

The retorts, in which the mixture of carb. soda and coke has been heated, have been chiefly of maleable iron; but, as it is difficult to obtain these of a large size, retorts of earthenware or fire-clay have been used with success, and probably a fire-clay retort, with a lining or trough of malleable iron, will be found to be the best form of distilling apparatus, though with great care cast-iron retorts may yet be employed with advantage. The principle improvement which I have effected, and which is now engaging the attention of M. Deville, consists in making the process continuous; so that the retort is maintained at nearly a uniform temperature, and only requires the introduction of a fresh charge when the previous one has been worked off. If the materials are properly proportioned, the retort becomes nearly empty at the termination of each distillation; or, if an excess of carbon remains in the retort, it is available in the following operation, so that in this way one retort has been kept in full action for a week, and sometimes for nearly a second week, without interruption. As soon as one distillation is completed, and the condenser removed, a fresh charge of soda and carbon is introduced into the retort, through the same tube as emits the sodium, by means of a long semi-circular scoop, and the retort being nearly filled, the new distillation commences in a short time, and

proceeds with the greatest regularity and success; the sodium which I have sent to the Paris exhibition, was prepared in this way, and, as before stated, it was only because there seemed to be no demand for the metal, that it was not prepared on an industrial and extensive scale; perhaps, as in some other instances, the supply may create or excite the demand. In addition to the sodium, it is well known that a large quantity of croconates and other compounds of soda distil over and are found mixed with the sodium, and as their separation is tedious in small quantities, I have constructed a large iron cylinder, in which the sodium and its impure admixtures are heated to fusion, below the surface of naptha or camphine, and a piston or plunger being then forced down by a powerful screw or hydraulic press, the pure metal is found in a mass above, and the impurities in the bottom of the cylinder.

The subjoined figure will explain the method of continuous distillation:—



(*a*) Retort of iron, inside of fire-clay. (*b*) Chamber of reverberatory furnace. (*c*) Eduction tube, attached by screws at (*d*) to the iron receiver (*e*), which is made in two parts, screwed together, and cemented at (*f*), the lower part (*g*), containing naptha or camphine. (*h*) Tap supplying cold water, which by means of an external case circulates round the condenser (*e*), falling into the pan (*P*). (*R*) is a strong iron rod, with sharpened steel chisel at the end, for clearing out the eduction tube (*c*). (*s*) Escape tube for incondensible gases.

Rotherham, August 14*th*, 1855. *The Chemist.*

ON THE USE OF HENNA AND KOHEUL AMONGST THE ARABS.

By M. Bertherand.

Cosmetics are employed amongst the Arabs with a double object; being not only designed to augment beauty, but to preserve health. Nearly all the women, particularly the Kabyles, and a great number of the natives of both sexes belonging to the higher classes, stain the hands and feet with henna. This substance, which is the flower of the *lawsonia inermis*, finely powdered and diluted with a little water, is applied to the extremities before going to bed, a soft linen rag afterwards enveloping the parts. The next day we will find these portions of the body stained of a yellowish brown, and this coloration will last for a long time (twenty days,) so that it is not necessary to repeat its application very often, notwithstanding the frequent use of baths, &c.

Henna seems, as it were by tanning the skin, to increase its tenacity, and it also diminishes its transpiration, and preserves its delicate sensibilities against all sudden changes of temperature. These advantages are so real, that the Arabs use the henna as a dressing to all wounds, even with their horses. The lawsonia inermis certainly deserves to be introduced under very favorable circumstances, into the materia medica. I have oftentimes witnessed its good effects in Algeria, especially in those distressing cases of fœtid sweating of the feet. I have seen its application every week, result in entire relief.

These cosmetics are considered of so much importance by Mussulmen, that there are laws which thus speak of them. "It is a duty binding on the husband to furnish the woman with those cosmetics which custom has received and acknowledged as useful, as, for instance, the koheul for the eyes, ointment and oil for the hair, henna for the head, hands and feet; also those instruments which are necessary for anointing the head and body, &c."

Henna also possesses another value with these nations. The flowers are employed to perfume their clothes and their houses, and both of these are very much in need, as a general rule, of some such process.

In the cities, women paint themselves with saffron, or with an ointment (*rusma,*) containing an arsenical base which is sometimes

productive of dangerous consequences. They also stain and unite their eyebrows at the base of the forehead, by using a strong decoction of nutgalls. The color obtained is of a deep chestnut. At other times this paint is composed of black lead, or again, of a mixture of oil and the cinders of the saffron flower (*carthamus tinctorius.*) These flowers are much cultivated for their coloring properties. They contain two coloring principles; one yellow and soluble in water; the other resinous, red and soluble in the alkalies, used particularly in the arts and as a cosmetic. The Arabian courtezans paint their cheeks with this carmine.

A hygienic practice equally common with the use of henna, is the koheul. Many persons think that this expression, and the use of this particular substance is found in the language, and is one of the customs of every oriental nation. The fact is that Mahomedans of every nation, Indians, Persians, Negroes, Turks, &c., all use this cosmetic. The habit of anointing the eyelids with some anti-opthalmitic substance, can be traced to the very remotest antiquity. Jeremiah, Isaiah, Ezekiel, St. Jerome, Clement of Alexandria, allude to it. The Greeks and Romans used these things. Pliny thus expresses himself: "*Vis stibii principalis circa oculos, nam quæ ideo etiam plerique platy-opthalmon id appellavêres, quoniam in calliblepharis mulierum dilatat oculos,*" that is to say, the principal effect of the antimony concentrates itself about the eyes, hence we generally call it platy-opthalmos, because of the ophthalmic ointments used by women, this is the one which dilates the eyes.

Amongst the Arabs, we find koheul used always by the higher and most educated classes. The use of this substance, which principally consists of the *sulphuret of antimony*, was commanded by all the Arabian wise men, and enjoys a popular reputation, justly merited. This preparation has the valuable property of preventing inflammation of the eyes, by its absorbing, owing to its dark color, a large portion of the luminous rays, and in giving to the eyelids a tenacity which enables them to contract and relax much more easily. It also prevents a supersecretion of tears, and thus renders the sight clear and strong. Its composition is variable; ordinarily, koheul is made of nothing but the sulphuret of antimony finely powdered, which is mixed with a

little water or some fatty body. It is kept in a narrow vial (mkhalèl) made of some of the precious metals. When it is to be applied, a very fine stylet (mirowed,) highly polished, is dipped into the bottle, and this covered with koheul, is passed between the eyebrows previously closed. The edges of the lids acquire a very deep tinge, which is blueish, if there is nothing used but antimony, but black, if the sulphuret has been mixed with lampblack. The blue color is found amongst the negroes, who never use the latter ingredient.

In those tribes where the antimony is difficult to obtain, koheul is composed of the charcoal of the laurel, rose and black pepper, very finely pulverized. At other times, to give more astringent power to the preparation, they mix in a mortar, in equal proportions, sulphuret of antimony, sulphate of copper, burnt alum, carbonate of copper, some cloves and a little lampblack. This is carefully mixed together. Prostitutes make their koheul with a powder of the dried saffron leaves, mixed with lemon juice. This preparation must be applied for many hours, but will last a long time. Frequently the sweet rush (*andro pegon nardus*,) and benzoin, is mixed with koheul to improve the power of vision, and from the use of this substance in all forms of opthalmitic, I have found the greatest success.—*Virg. Med. and Surg. Jour., from "Medicine and Hygiene among the Arabs."*

ON CHLORIMETRY.

By C. Nœllner.

The general employment of chloride of lime as a bleaching and oxidizing agent, with its readiness to undergo change when long kept, and the variableness of its chemical composition even when apparently prepared in a similar manner, has given rise to a number of methods for determining its practical value.

Chemical manuals contain numerous methods for this purpose, generally founded on volumetric principles; Duflos alone, in his 'Theory and Practice of Pharmaceutical Experimental Chemistry,' proposes, by means of *sulphurous acid*, to form a quantity of sulphuric acid corresponding with the efficient amount of chlorine as a bleaching or oxidizing agent, and thus to determine it as sulphate of baryta by weighing.

Notwithstanding many advantages, this method has met with but little acceptance, probably because sulphurous acid is not much employed in chemical laboratories; and, moreover, the aqueous solutions both of the free acid and its salts are converted by keeping into sulphuric acid and sulphates, so that when chlorimetric investigations only occur at considerable intervals, it is necessary to prepare this substance afresh upon each occasion, which will, of course, render the whole operation much too long for many.

All these disadvantages are got rid of by employing, instead of sulphurous acid, *hyposulphite of soda*, which is also converted into sulphate by free chlorine even at ordinary temperatures, and has hence been long employed for the removal of the last traces of chlorine from the stuffs bleached by it.

1 grm. of a sample of chloride of lime is mixed with about 2 grms. of hyposulphite of soda and water in a flask of such size, that when closed with a cork there shall be room enough left to allow of the complete diffusion of the chloride of lime by shaking, which is usually effected with ease. The complete conversion of the hyposulphite into sulphate takes place even in the cold, but for greater certainty the flask is heated a little in the water-bath. It is then mixed with a few drops of pure muriatic acid, or rather a sufficient quantity to make sure of the decomposition of all the excess of hyposulphite of soda, which takes place in the heated fluid immediately, with formation of sulphurous acid and sulphur. By inclining the flask and boiling for a few minutes, all the sulphurous acid is expelled, and the sulphur is deposited in drops exactly as in the decomposition of the metallic sulphurets by acids; so that on the complete decomposition of the excess of hyposulphite of soda, the fluid, which was at first milky and yellowish-white, becomes nearly limpid, and its separation from the melted sulphur by filtration is very easily effected, as is also the subsequent washing of the filter. The filtrate then contains the chloride of calcium of the chloride of lime, the excess of the muriatic acid added, and the chloride of sodium produced, together with a quantity of sulphate of soda exactly corresponding with the amount of oxidizing chlorine. This is precipitated with muriate of baryta.

As 16 of sulphur take up 8 of oxygen to form hyposulphurous

acid, and the same 16 of sulphur must again take twice 8 of oxygen to be converted into sulphuric acid, for every 2 equivs. of chlorine 1 equiv. of sulphate of baryta, representing sulphuric acid, will be formed, and—

116.5 parts by weight (=1 equiv.) of sulphate of baryta will represent 71.5 parts (= 2 equivs.) of chlorine.

Hyposulphite of soda is unchangeable in the air, both in the solid state and in solution; and from its general employment, may be always obtained pure in commerce. Its conversion into sulphate by chlorine takes place readily, and its decomposition by muriatic acid gives origin only to sulphuric acid. Lastly, the sulphate of baryta formed is a compound which, when washed by decantation and afterwards on the filter, may be placed in the platinum crucible, dried, and heated to redness without decomposition. From these circumstances, this method appears to be preferable to all others, as with a little practice it may be effected as rapidly as the volumetric methods, and with a certainty equal to that of the most exact analyses.

A good commercial example of chloride of lime should furnish, according to the above method, at least its half of sulphate of baryta, which represents 30 per cent. of chlorine.—*Chem. Gaz. Sept.* 1, *from Liebig's Annalen.*

PRODUCTION OF SAFFRON IN KASHMERE.

Pampur, a large village on the right bank [of the river Jhelum], is celebrated for its saffron grounds. The cultivation of this flower is carried on in nearly every part of this *pergunnah*, the local soil being alone found suited for the purpose. It appeared to consist of a light ferruginous clay, which is excavated near the Jhelum, and carried to the fields by great manual labor. The bulbs are planted out in small square beds in June, weeded and freely irrigated, and the crop is collected in October. The Maharajah and his myrmidons attend the gathering and take the *spolia opima* of the occasion. The drug is sold in the royal bazaar, and I was informed that one rupee *per seer* was levied as export duty on the trader. It varies in price according to quality. I observed some as low as five rupees the *seer* of two pounds, but this was mixed with very ancient stuff, or what was

often worse, with the dried *petals* of the flower. True saffron (under royal warranty) fetches from seven to ten rupees *per seer*, *i. e.*, in Kashmeree coinage,—which is little more than half the East Indian Company's. Steeping the article in water previous to weighing out is commonly practised, which, in addition to increasing weight, injures its coloring properties irretrievably.

Sometimes the unwary Hindustanee merchant packs it in the damp state, and, on reaching the plains, discovers to his great sorrow that the precious purchase has become a mass of mouldy rubbish, unsaleable at a *pice*. This happened under my own observation.—*Lieut. W. H. Lowther "On the Natural Productions of the Vale of Kashmere." Journal of the Agricultural and Horticultural Society of India*, vol. viii., (1854), *and Ph. Jour.*

ON THE PURIFICATION OF ANTIMONY.

By M. J. Lefort.

All chemists who have had occasion to use metallic antimony, know how difficult it is to purify it for pharmaceutical purposes, of the last portions of iron, of lead and above all, of arsenic, which it always contains. To these impurities I may add bismuth, which I have found in some quantity in two samples met with in commerce, the origin of which I was unable to trace.

The severe criticisms which have been published on the process hitherto indicated for getting antimony in a state of absolute purity, tend to show that this operation, although simple in appearance, is really attended with some difficulty.

Among the different processes for the purification of antimony, there are two, which, being recommended on the authority of Wöhler and Liebig, claim the especial attention of pharmaceutists.

Wöhler's process is based on the transformation of the metals into acids, by means of nitrate of potash. There are thus produced insoluble antimoniate of potash, and soluble arsenite of potash.

Berzelius, who tried this process, found that it did not always yield a product free from arsenic, for the resulting antimony heated in the blowpipe flame with charcoal generally affords a slight alliaceous smell.

Liebig's process, to which some authors give the preference, is as follows :—

Sixteen parts of metallic antimony are mixed with one part of sulphuret of antimony and two parts of dry carbonate of soda, and the mixture fused in a Hessian crucible. The button of metal which results is powdered, then fused with one-and-a-half part of carbonate of soda, and the product of this operation is again powdered and fused a third time with one part of carbonate of soda.

I have found that this process, which in practice is rather tedious, does not answer well if the antimony contains much of the foreign metals. It is also subject to the objection that it is not economical, as during the three successive fusions, much of the antimony is lost in the scoria which is rejected. Moreover, Mosander, Berzelius, Berlin, Bucholz, and Trommsdorff assert that they have always found arsenic, even after fusing the metal many times with carbonate of soda.

I have endeavored to ascertain whether a more satisfactory result may not be obtained by substituting a wet process for the dry process. In fact, I have found that, by converting the antimony into antimonic acid by means of nitric acid, it is possible not only to dissolve all the arsenic in the state of arsenious acid, but also to convert the lead, bismuth, and iron, into soluble nitrates.

The following is the process I adopt :—

Into a porcelain capsule of large capacity placed under a chimney, I put 500 grammes of commercial nitric acid, and add, in small quantities at a time, 250 grammes of metallic antimony reduced to a fine powder. Each addition of metal causes the disengagement of abundance of nitrous fumes. All the antimony passes to the state of insoluble antimoniate of antimony, which is quite white, while the foreign matters remain in solution in the supernatant liquor. The product of this operation is thrown into a large precipitating vessel and washed several times by decantation, with water containing one per cent. of nitric acid. After eight or ten successive washings, the deposit is drained as much as possible, and then mixed with thirty or forty grammes of powdered sugar. The resulting paste is put into a Hessian

crucible, and calcined at a red heat. After the mass has cooled, there will be found beneath the scoria a button of metal, which, when tested with the blow-pipe and with reagents, will not afford evidence of the presence of a trace of any foreign metal, and especially of arsenic.—*Pharm. Jour., Nov.*, 1855, *from Journal de Pharmacie.*

ON THE OBLIQUE DIRECTION OF THE LIGNEOUS FIBRE, AND THE TWIST OF THE TRUNKS OF TREES OCCASIONED THEREBY.

Read before the Academy of Sciences at Berlin, and published in its Proceedings.

This twist of the wood of many trees is a phenomenon well known to wood-cutters, shingle-makers, carpenters, and others, but almost entirely neglected by botanists. The distinguished geologist, the late Leopold von Buch, appears to have first directed the attention of scientific men to it; and De Candolle, in his *Organographie* (1827) was the first botanist who spoke of it. Little has since been done to substantiate or elucidate the phenomenon. In the pamphlet before us Prof. Braun gives the result of a great many observations made by himself in Germany, by his brother in France and Spain, and by the writer of this notice in the Mississippi Valley.

Most trees show this obliquity of the woody fibre more or less. In certain species the twist is almost uniformly in the same direction: in others both directions occur with about equal frequency; while in not a few no twist is distinctly observable. Sometimes the same direction prevails in the majority of the species of a genus, or even of a whole family: in other cases opposite directions occur in the same genus or family; and it is curious to remark that in some instances nearly allied species of Europe and America twist in opposite directions. In a few instances the fibre of a young tree is twisted in one direction; that of the old tree in the opposite direction.

In speaking of the direction, it is necessary to come to an understanding, first of all, as to what we mean by right or left, a distinction attended with more difficulty than would appear possible. Prof. Braun follows De Candolle and others in viewing the twist or coil objectively; imagining himself in the centre of

the coil. Thus viewed the bean-vine turns to the *left*, the hop-vine to the *right*, &c. Linnæus and others, however, have adopted the opposite, or subjective view, and regard the bean and other leguminous plants as turning to the right, as they appear to an observer standing before the coil.

The twist of the fibre may be discerned in splitting the wood, or in its cracks when the bark is stripped off, or in the course of the fissures made by lightning. Very often the bark itself, at the angles or superficial lines of the trunk, indicate the direction of the wood within very distinctly. We make a few extracts from 167 species observed.

No manifest twist has been observed in the species of *Fagus*, *Juglans* and *Carya*, either in Europe or America, nor in *Ulmus*, *Ailanthus*, *Fraxinus*, *Acer dasycarpum*, *Gleditschia* or *Robinia*, though the latter exhibits a very slight twist to the left. The woody fibre twists to the right in *Pinus strobus*, *Ostrya Virginica*, the Chesnut of Europe, the European and American *Salices*, *Populus pyramidalis*, *Cornus Florida*, *Liriodendron* (in Indiana and Illinois, though in cultivated specimens the twist was found to be the other way; but more observations are required), the Peach, Plum, and Cherry trees, and the European *Cercis siliquastrum*, the only leguminous tree known to twist to the right. The twist to the left hand is the more common: it occurs in most *Coniferæ*, especially in *Juniperus Virginiana*, *Taxodium distichum*, *Pinus sylvestris*, (of which young trees twist, however, in the opposite direction), *Picea excelsa*, &c., *Betula Alnus*, *Ostrya*, *vulgaris* and *Castanea Americana* (both in opposite direction to the nearly allied species of the Old World), *Quercus robur*, *Populus angulata*, *Catalpa*, *Æsculus hippocastanum*, the Pear tree, and more than any other, the Pomegranate, also most Leguminous trees.

Most American Oaks, the Sassafras, *Acer nigrum*, the Apple tree, &c., twist about as often to the right as to the left,

The cause of the apparent twisting is not easily ascertained. It is not occasioned by an actual twisting of the whole stem, but belongs to the growth of the successive annual layers. Prof. Braun connects it with the growth of the wood-cells, of which the ends, at their formation are horizontal or nearly horizontal, become wedge-shaped as they elongate, and if these wedges

assume the same direction in the whole circumference of the stem, as they are apt to do, the wood-cells would assume a certain obliquity; so that this twist of the wood is connected with the intimate nature or disposition of the cells themselves. But this is not sufficient to explain the higher grades of the obliquity, which sometimes reaches an angle of 45 degrees. It would here be desirable to ascertain whether the cambium cells divide in this oblique direction and high angle. Any one who may take an interest in these investigations, is requested to institute observations and make memoranda, noting the number of trees observed, as well as the direction and angle of the twist observed, if any.—G. E. *Silliman's Journal, September*, 1855.

DETECTION OF A CRUCIFEROUS OIL, WHEN MIXED WITH ANY OTHER FRUIT OR SEED OIL.

By M. Mailho.

The difficulty of distinguishing the different fatty oils of commerce, in a state of mixture, has been the subject of various researches for a length of time, and yet the indicated tests do not always lead to an easy detection; especially when the mixture is the result of fraud, and the inferior oils added are in such proportion as to preserve to the adulterated article its physical characters. In such case Lefebre's oleometer, which is usually used in commerce, does not indicate the true nature of the oil; and even when it indicates fraud, it cannot tell us what oil has been added. For olive oil, the nitrate of mercury test, proposed by Poutet, and the hyponitric acid of M. Felix Boudet, are sufficiently accurate reagents. Oils used for burning, find in chlorine (as proposed by M. Fauré) a delicate test for indicating the presence of an animal oil, but no method has yet been published for indicating the presence of a cruciferous oil in other fatty oils, such as linseed, nut, or olive oil.

Having been called upon to examine a certain quantity of linseed oil, in order to decide a dispute between buyer and seller, I subjected the oil to the different reagents as indicated by those Chemists who have principally studied this branch of analysis, and although they proved to me that the oil could not be pure, I was at a loss to specify the adulteration. After many futile ex-

periments, I found in saponification the means of detecting the nature of the fraudulent admixture. When acted upon by a caustic alkali, the oil deposited a small portion of sulphur, which blackened immediately the silver basin which I used in the operation. This circumstance caused me at once to suspect that the oil used for adulteration was derived from a cruciferous seed. I treated all the commercial fatty oils with a solution of pure caustic potash, and I had the satisfaction to see, that all the cruciferous oils yielded a quantity of sulphur, which in the state of alkaline sulphuret formed in the process, was quite sufficient to be detected by the usual reagents—as lead or silver, salts, &c. All the other oils, as linseed, poppy, nut oil, could be treated in the same way without any indication of the presence of sulphur.

I propose, therefore, the following as a test for an oil of the cruciferæ—such as colza, rape, mustard, &c., in other oils. Twenty-five to thirty grammes (seven to eight drachms) of the suspected oil are boiled in a porcelain basin, with a solution of thirty grains of pure caustic potash in five drachms of distilled water. After an ebullition of a few minutes the whole is filtered, and the filtrate, when tested with nitrate of silver or acetate of of lead paper, will speedily indicate the presence of sulphur.

If, instead of a porcelain capsule, the oil is saponified in a silver vessel, the blackening of the latter speedily becomes visible. This test is very prompt and delicate, indicating the presence of one hundredth part of a cruciferous oil in any other oil.—*Pharm. Journ., from Comptes Rendus.*

PHYSIOLOGICAL AND THERAPEUTIC EFFECTS OF CARBONIC ACID.

Some weeks since M. Herpin, of Metz, stated the following facts to the Academy. Dr. Struve took the Marienbad waters for a painful affection of the leg. He had been unable for several weeks to walk without a crutch. Dr. Struve had the notion one day of exposing his leg to the action of the carbonic acid which escapes freely from the spring at Marienbad, and forms a bed several decimeters deep over its surface. After exposure for a while it produced a pricking sensation and warmth, which went on increasing till it occasioned a profuse perspiration of the diseased limb. On withdrawing then his leg, he was surprised to

feel no pain, and to find that he was able to walk without his crutch. He continued this treatment for some time, and has since experienced no return of his complaint.

There are now in Germany special establishments for baths, douches, and the inhalation of carbonic acid. According to M. Herpin, the first effect of exposure to the gas is a sensation of pleasant heat, like that from a garment of fine wool—then a pricking, and afterwards a burning which has been compared to that from mustard.

On the occasion of this communication, M. Boussingault related how he happened in 1826 to witness some of the effects mentioned by M. Herpin. He was visiting in the Quindiu, New Grenada, a part of the Cordillera, some *solfataras*, where numerous workmen were occupied melting and purifying sulphur. He encountered a crevice whence issued abundantly a gas of the odor of sulphuretted hydrogen. He attempted to descend in it in order to ascertain the temperature; but he had hardly entered the crevice when he felt a suffocating heat, which he estimated at 40° C., and a pricking in the eyes; respiration being difficult, he ascended quickly; his face was red and his perspiration abundant. After a while he descended again with his thermometer, and was surprised to find a temperature of only 18½° C. The extreme temperature was 22° C. The gas was composed of 95 per cent. of carbonic acid and 5 p. c. of atmospheric air and sulphuretted hydrogen. It was hence the carbonic acid which caused the sensation of heat and the irritation of the eyes.

At two other times, in 1827 and 1830, M. Boussingault experienced again the same sensations. He observed that the workmen who work long in the solfataras of the Cordillera, in contact with the carbonic acid, experience an enfeebling of the sight, and some of them become blind.

Dr. Herpin confirmed the fact with regard to the action of on the eyes of the baths of gaseous carbonic acid. He observed that the douches of carbonic acid had been used against "*amblyopia*," or enfeebling of vision, and different precautions were used to moderate the effects of the gas or diminishing the force of the jet, or its distance; or its direct action by interposing muslin. When the eyes have an inflammatory tendency, it irritates the organ, and even the neighboring parts; the heat sometimes produces dangerous congestion.—*Silliman's Journal, Sept.*, 1855.

GAS FROM PEAT.

There is much discussion in connection with the renewal of the engagements of the city of Paris with the gas companies. Attention has thus been called to the gas from peat, which for some time has been manufactured in Paris. M. Leon Foucault has been charged with measuring the comparative illuminating powers of coal and peat gas; and the result is in favor of that from peat, its power being 342, while that of coal is 100.

The manufacture of peat gas is more simple than that of coal. The peat, if put into an iron retort, heated to a low red heat, affords immediately a mixture of permanent gases, and vapors which condense into an oleaginous liquid, which two products separate on cooling. The oil is collected in a special vessel, and the gas passes into a gasometer. This carburetted hydrogen is wholly unfit for illumination, it giving a very small flame, nearly like that from brandy. The oil from the peat is a viscous blackish liquid, of strong odor; it is subjected to a new distillation, and resolved wholly into a permanent gas and hydrogen very richly carburetted. This mixture is strongly illuminating, giving a flame six or eight times brighter than the first and of more lively brilliancy. The two are mixed, and a gas of intermediate character obtained, which is delivered over for consumption.

M. Foucault has made his trials with a photometric method which will soon be made known. Its unit was not a single wax-candle, but a collection of seven candles, arranged in a hexagonal manner with spaces of one centimeter. A single candle is liable to too much variation, a compensation for which is secured when a number is employed.

By this method, a mean of five determinations gave for a burner of peat gas a light equivalent to 23¼ candles; and the same burner with coal gas $6\frac{3}{10}$ candles.

The illuminating power of pure oil from peat—the illuminating material "par excellence"—has been found, at equal pressures, 705, the intensity for coal gas being 100; and with equal volumes their numbers are 756: 100.—*Silliman's Journal.*

AUSTRALIAN MEDICINAL PLANTS.

Dr. Ferdinand Müller, Government Botanist to the Colony of Victoria, Australia, has addressed to the Colonial Secretary, his first General Report on the Vegetation of the Colony, under date Melbourne, Sept. 5, 1853. In this report, which, in conjunction with other documents relating to Australia, has recently been printed and presented to Parliament, the author thus refers to the plants of that country, which, in his opinion, are likely to prove useful in medicine:—

The inestimable truth, that we may safely deduct the closest affinities of the medicinal properties of plants from their natural alliance—a truth which achieved the most complete triumph of the natural system over all artificial classifications—has generally guided me in tracing out which plants might be administered in medicine. By this guidance, I observed that our *Pimeleæ* are pervaded by that acridity for which the bark of *Daphne mezereum* is employed; that our *Polygala veronica*, F. Müll., the only described Australian species of a large genus, and in close relation to one lately discovered in the Chinese empire, not only agrees, like some kinds of *Comesperma*, with the Austrian *Polygala amara*, in those qualities for which that plant has been administered in consumption, but also participates in the medicinal virtue of *Polygala senega* from North America. *Gratiola latifolia*, R. Br., and *G. pubescens*, R. Br., *Convolvulus erubescens*, Sims, and the various kinds of *Mentha* are not inferior to similar European species. The bark of *Tasmania aromatica*, R. Br., appears to me to possess the medicinal power of Winter's bark, gathered from a similar tree in Tierra del Fuego; and this fruit is allied to that of the North American *Magnoliæ* used in cases of rheumatism and intermittent fever. The whole natural order of *Goodeniaceæ*, with the exception perhaps of a few species, contains a tonic bitterness never recognized before, and discernible in many plants in so high a degree, that I was induced for this reason to bestow upon a new genus from the interior the name of *Picrophyta:* this property, which indicates a certain alliance to *Gentianeæ*, deserves the more consideration, as the true gentians are so sparingly distributed through Australia, while the *Goodeniaceæ* form everywhere here a prominent fea-

ture in the vegetation. Our Alps, however, enrich us also with a thick-rooted gentian (*G. Diemensis*, Griesebach), certainly as valuable as the officinal *Gentiana lutea;* and in the spring *Subœa ovata*, R. Br., and *S. albidiflora*, F. Müll., might also be collected on account of their bitterness. The bark of the Australian sassafras tree (*Atherospermum moschatum*, Forst.) has already obtained some celebrity as a substitute for tea. Administered in a greater degree of concentration it is diaphoretic as well as diuretic, and has for this reason already been practically introduced into medicine by one of our eminent physicians. *Isotoma axillaris*, Lindl., surpasses all other indigenous *Lobeliaceæ* in its intense acridity, and can be therefore only cautiously employed instead of *Lobelia inflata.* The root of *Malva Behriana*, Schlect. scarcely differs from that of *Althœa officinalis*, and the salep root might be collected from many *Orchideæ.* Few may be aware the Cajepet Oil of India is obtained from trees very similar to our common *Melaleucæ;* and that even from the leaves of the *Eucalypti* an oil can be procured of equal utility. The Sandrac, exuding from *Callitris*, or pine tree, the balsamic resin of the grass trees, and, moreover, the *Eucalyptus* gum, which could be gathered in boundless quantities, and which for its astringent qualities might, here at least, supersede the use of kino or catechu, will probably at a future period form articles of export.

Several *Acaciæ* are of essential service, either for their durable wood, or for the abundance of tannin in their bark, which has rendered them already useful, or their gum; but the latter is even excelled in clearness and solubility by that obtained from *Pittosporum acacioides*, A. Cunningh. This species, as well as many other plants of the same order, is distinguished by a surprising yet apparently harmless bitterness—a quality that warrants our expecting considerable medicinal power, and which deserves so much more attention, as till now we know nothing of the usefulness of the *Pittosporeæ*, although this order extends over a greater part of the eastern hemisphere.

The Australian manna consists in a saccharine secretion, condensed chiefly by the cicades from a few species of *Eucalyptus*, but is chemically very differently constituted to the *Ornus* manna, and much less aperient. All our splendid *Diosmeæ*—a real orna-

ment to the country—approach more or less in their medicinal effect to the South African Bucco-bushes.

Baeckea utilis, F. Müll., from Mount Aberdeen, might serve travellers in those desolate localities as tea, for the volatile oil of its leaves resembles greatly in taste and odor that of lemons, not without a pleasant, peculiar aroma. *Trigonella suavissima*, Lindl., proved valuable as an antiscorbutic spinach in Sir Thomas Mitchell's expedition; and the *Tetragonella implexicoma*, Miquel, the various *Cardamines*, *Nasturtium terrestre*, R. Br., or *Lawrencia spicata*, Hook., may likewise be used for the same purpose. The root of *Scorzonera Lawrencii*, Hook., a favorite food of the natives, would form, if enlarged by culture, an agreeable substitute for *Scorzonera Hispanica*, or asparagus; and *Anisotome glacialis*, F. Müll., a large-rooted umbelliferous plant from the snowy top of Mount Buller, will be added hereafter, perhaps, to the culinary vegetables of the colder climates. Seeds of the latter plants, amongst many others, have been procured for the Botanic Gardens. *Santalum lanceolatum*, R. Br., *Mesembryantheum æquilaterale*, Haw., *Leptomeria pungens*, F. Müll., and *L. acerba*, F. Müll., deserve notice for their agreeable fruit.—*Pharm. Journ.*, Sept. 1855.

RESEARCHES ON OXYGEN IN A NASCENT STATE.

By M. Auguste Houzeau.

In considering one of the more remarkable cases in which oxygen assumes a nascent state, namely that which occurs in the preparation of oxygenated water, I have been led to suppose that if by a happy doubling of the two atoms of oxygen, which are united to barium to form the binoxide, I succeeded in setting free the extra atom out of contact with any oxidizable substance, the molecule would in its disengagement show itself to possess in a high degree, oxydizing properties. It is this, in fact, which occurs when monohydrated sulphuric acid is allowed to react at a low temperature upon binoxide of barium. Of the various apparatus which I have employed in the laboratory of M. Boussingault for the preparation of nascent oxygen, the most simple consists of a tubulated globe, the narrower neck of which is fitted with a conducting-tube passing under a bell-glass

filled with water. The sulphuric acid being first poured in, it is sufficient to drop into it the earthy superoxide in small fragments, rapidly closing the neck of the globe with a cork. The disengagement of gas is not long delayed, and it proceeds the more rapidly the more the mixture becomes heated. In certain cases it is necessary to favor the reaction by plunging the globe into a water-bath at 122° to 140° Fahr., as in other cases is indispensable to moderate it by the use of cold water.

Nascent oxygen is a colorless gas, possessing a strong odor; it should be respired with care, as introduced into the system too largely, it gives rise to nausea, which may be succeeded by vomiting. Its odor, which at first is not repulsive, becomes insupportable when it has been smelt many times. Its taste suggests a little that of lobster.

Heated to about 167° Fahr., or exposed to solar light, it loses all its active properties. In the presence of water, and at the ordinary temperature of the air, it oxydizes most of the metals, even silver, superoxydizes in general the metallic protoxides, and transforms also directly arsenious, into arsenic acid, &c. The alkalis (potash, soda, lime, baryta) and the acids (sulphuric, phosphoric, nitric) react strongly upon it. Even ammonia, in contact with nascent oxygen, undergoes a great modification; its elements are truly burned, the result of the combustion being a nitrous compound. In fact, it is only necessary to pass into a bell filled with the odorous gas, a rod of glass wetted with a solution of ammonia, when the vessel is instantly filled with abundant vapors of nitrate of ammonia.

Phosphoretted hydrogen, not spontaneously inflammable, and which we know is unaltered at 68° Fahr. by ordinary oxygen, burns on the contrary with the emission of light in the nascent gas.

Lastly, hydrochloric acid dissolved in water cannot resist the energetic affinity of active oxygen; its elements are dissociated in consequence of the combustion of the hydrogen, and the chlorine set free will dissolve gold leaf placed in the modified acid.

Nascent oxygen is thus a *chloridizer* in the sense that chlorine is an *oxidizer*, and, in fact, it is to this remarkable power of combustion that the metallic superoxides owe their faculty of

causing the disengagement of chlorine under the influence of hydrochloric acid.

The odorous gas reacts yet more rapidly on iodide of potassium, the iodine of which it sets free; it spontaneously decolorizes the tinctures of litmus, cochineal, and logwood, sulphate of indigo, &c., thus manifesting a power which even chlorine can hardly equal. Porous bodies absorb it, and also singularly modify it, since by merely passing it slowly through a glass tube filled with asbetos, spongy platinum, lint, carded cotton, strips of flannel, or the like, the odor and oxydizing properties of the gas are destroyed.

Although from the properties just described, it would not be possible to confound the nascent gas with ordinary oxygen, I have nevertheless thought that their differences would be still more apparent by a comparative statement of their respective properties; thus:—

Comparison of the general properties of *Ordinary Oxygen* and of *Nascent* or *Active Oxygen*, both being in the free state and at a temp. of 59° Fahr.

	ORDINARY OXYGEN.	NASCENT OR ACTIVE OXYGEN.
	Colorless, inodorous insipid gas	Colorless, very odorous gas, having taste of lobster.
Ammonia		Burns it spontaneously, transforming it into nitrate.
Blue Litmus	No rapid action	Decolorizes it rapidly.
Silver	Does not oxydize it	Oxydizes it.
Phosphoretted Hydrogen Gas	No action	Instantly burns it with the omission of light.
Iodide of Potassium	Does not decompose it	Acts rapidly upon it, setting free the iodine.
Hydrochloric Acid	No action	Decomposes it, setting free the chlorine
	Is a feeble oxydizer	Is a powerful oxydizing agent and an energetic chloridizer [*chlorurant*].
	Very stable at all temperatures	Stable at 59°; is destroyed at about 167° Fahr.

Binoxide of barium is not, however, the only body which can thus disengage active oxygen, other oxygenated substances having also afforded it to me under certain circumstances.

When one considers in their *ensemble* the numerous chemical reactions to which oxygenated compounds give rise, and which alone constitute the greatest part of the metamorphoses of which Chemistry is the study, one may always recognize in *combined* oxygen that increased energy which distinguishes free oxygen

in a nascent state, and which the latter [usually] ceases to possess immediately it is isolated from its combinations: an inactivity the more characteristic, since it becomes a property also of the *odorous* gas, when the latter has been subjected to the influence of heat or of light, or to the contact of certain substances with which it forms no union. It is thus that arsenious acid, unalterable by ordinary oxygen, is directly oxydized by free nascent oxygen, in the same manner as oxygen itself operates in the state in which it exists in nitric acid or in water decomposed by chlorine.

The case is the same with hydrochloric acid, which, undergoing no alteration from contact with ordinary gaseous oxygen or from the nascent gas if previously heated up to 176 Fahr., acquires on the contrary, the power of dissolving gold in the presence of nitric acid or of the binoxides of barium, manganese, lead, &c., or of certain oxygenated salts, exactly in the same manner as in the presence of free, active oxygen, as mentioned above.

Hence the idea of the pre-existence of nascent oxygen in combination is that which I wish to enforce in this paper. Moreover, it must be borne in mind that the ordinary methods employed to liberate oxygen are scarcely of a nature to favor the emission of the gas in its primitive state, since they are based upon the employment of certain agents, such as caloric, light, catalytic force, capable themselves of destroying the activity of nascent oxygen. Thus, it appears that in calcining the peroxides of manganese or of barium, or the various oxygenated salts. such as chlorates, chromates, &c., it is impossible to obtain from them *active* oxygen, and even when Priestly, in his memorable experiment of the 1st of August, 1774, succeeded in decomposing the *Mercurius præcipitatus per se* (binoxide of mercury) by heating it in the burning focus of a lens, he could but set at liberty a degenerated principle, and the gas which he designated *dephlogisticated air*, which name Lavoisier, upon the creation of chemical language, transformed into *oxygen*, was none other than the hypothetical oxygen of modern chemists, modified by the disturbing forces employed at that period by the illustrious English philosopher.—*Pharm. Jour. Oct. 1st*, 1855, *from Jour. de Pharm. et de Chimie.*

Varieties.

On Perfumery. By SEPTIMUS PIESSE.

(Continued from page 558, vol. iii. 1855.)

EMULSINES.

From soaps proper we now pass to those compounds used as substitutes for soaps, which are classed together under one general title as above, for the reason that all cosmetiques herein embraced have the property of forming emulsions with water.

Chemically considered, they are an exceedingly interesting class of compounds, and are well worthy of study. Being prone to decomposition, as might be expected from their composition, they should be made only in small portions, or, at least, only in quantities to meet a ready sale.

While in stock they should be kept as cool as possible, and free from a damp atmosphere.

AMANDINE.

Fine almond oil . . .	7 lb.
Simple syrup* . . .	4 oz.
White soft soap, or saponaceous cream, *i. e.*, Creme d'Amande . .	1 oz.
Otto of almonds . . .	1 oz.
" bergamot . . .	1 oz.
" cloves . . .	½ oz.

Rub the syrup with the soft soap until the mixture is homogeneous, then rub in the oil by degrees; the perfume having been previously mixed with the oil.

In the manufacture of amandine (and olivine) the difficulty is to get in the quantity of oil indicated, without which it does not assume that transparent jelly appearance which good amandine should have. To attain this end, the oil is put into "a runner," that is, a tin or glass vessel, at the bottom of which is a small faucet and spigot, or tap. The oil being put into this vessel is allowed to run slowly into the mortar in which the amandine is being made, just as fast as the maker finds that he can incorporate it with the paste of soap and syrup, and so long as this takes place, the result will always have a jelly texture to the hand. If, however, the oil be put into the mortar quicker than the workman can blend it with the paste, then the paste becomes "oiled," and may be considered "done for," unless, indeed, the whole process be gone through again, starting off with fresh syrup and soap, using up the greasy mass as if it were pure oil. This

*Simple syrup consisting of 3 lb. of loaf sugar boiled for a minute in one pint, imperial, of distilled water.

liability to "go off," as the cook would say when the "melted butter" is "turned the wrong way," increases as the amandine nears the finish; hence extra caution and plenty of "elbow grease" must be used during the addition of the last two pounds of oil. If the oil be not perfectly fresh, or if the temperature of the atmosphere be above the average of summer heat, it will be almost impossible to get the whole of the oil given in the formula into combination; when the mass becomes bright and of a crystalline lustre, it will be well to stop the further addition to it.

This and similar compounds should be potted as quickly as made, and the lids of the pots banded either with strips of tin-foil or paper to exclude air. When the amandine is filled into the jars, the top or face of it is marked or ornamented with a tool made to the size of half the diameter of the interior of the jar, in a similar way to a saw, a piece of lead or tortoise-shell being serrated with an angular file, or a piece of an "old saw" will do very well; place the marker on the amandine, and turn the jar gently round.

Olivine.

Gum acacia, in powder . .	2 oz.
Honey	6 oz.
Yolk of eggs, number . .	5
White soft soap . . .	3 oz.
Olive oil	2 lb.
Green oil	1 oz.
Otto of bergamot . . .	1 oz.
" lemon . . .	1 oz.
" clove . . .	½ oz.
" thyme and cassia, each .	½ drachm.

Rub the gum and honey together until incorporated, then add the soap and egg. Having mixed the green oil and perfume with the olive oil, the mixture is to be placed in the runner, and the process followed exactly as indicated for amandine.

Honey and Almond Paste. (*Pate d' Amande au Miel.*)

Bitter almonds, blanched and ground .	½ lb.
Honey	1 lb.
Yolk of eggs, number . .	8
Amond oil	1 lb.
Otto of bergamot . . .	⅝ oz.
" cloves . . .	¼ oz.

Rub the eggs and honey together first, then gradually add the oil, and finally the ground almonds and the perfume.

Almond Paste.

Bitter almonds, blanched and ground .	1¼ lb.
Rose water	1½ pint.
Alcohol, 60 o. p. . . .	16 oz.
Otto of bergamot . . .	3 oz.

Place the ground almonds and one pint of the rose water into a stewpan: with a slow and steady heat cook the almonds until their granular texture assumes a pasty form, constantly stirring the mixture during the whole time, otherwise the almonds quickly burn to the bottom of pan, and impart to the whole an empyreumatic odor.

The large quantity of otto of almonds which is volatilized during the process renders it essential that the operator should avoid the vapor as much as possible.

When the almonds are nearly cooked, the remaining water is to be added; finally the paste is put into a mortar, and well rubbed with the pestle; then the perfume and spirit are added. Before potting, this paste, as well as honey paste, should be passed through a medium fine sieve, to ensure uniformity of texture, especially as almonds do not grind kindly.

Other pasts, such as *Pate de Pistache, Pate de Cocos, Pate de Guimauve,* are prepared in so similar a manner to the above that it is unnecessary to say more about them here, than that they must not be confounded with preparations bearing a similar name made by confectioners.

Almond Meal.

Ground almonds . . .	1 lb.
Wheat flour . . .	1 lb.
Orris root powder . . .	¼ lb.
Otto of lemon . . .	½ oz.
" almonds . . .	½ drachm.

Pistachio Nut Meal, or any other Nut.

Pistachio nuts (decorticated as almonds are bleached) . . .	1 lb.
Orris powder . . .	1 lb.
Otto of neroly . . .	1 drachm.
" lemons . . .	½ oz.

Other meals, such as perfumed oatmeal, perfumed bran, &c., are occasionally in demand, and are prepared as the foregoing.

All the preceding preparations are used in the lavatory process as substitutes for soap, and to "render the skin pliant, soft and fair!"

Emulsin au Jasmin.

Saponaceous cream . . .	1 oz.
Simple syrup . . .	1½ oz.
Almond oil . . .	1 lb.
Best jassamine oil . . .	½ lb.

Emulsin au Violette.

Saponaceous cream . . .	1 oz.
Syrup of violets . . .	1½ oz.
Best violet oil . . .	1½ lb.

Emulsin, of other odors, can be prepared with tubereuse, rose or cassie (acacia) oils (prepared by enfleurage or maceration.)

For the methods of mixing the ingredients, see "Amandine."

On account of the high price of the French oils, the preparations are expensive, but they are undoubtedly the most exquisite of cosmetiques.

Milks or Emulsions.

In the perfumery trade few articles meet with a more ready sale than that class of cosmetiques denominated milks. It has long been known that nearly all the seeds of plants which are called nuts, when decorticated and freed from their pellicle, on being reduced to a pulpy mass, and rubbed with about four times their weight of water, produce a fluid which has every analogy to cow's milk. The milky appearance of these emulsions is due to the minute mechanical division of the oil derived from the nuts being diffused through the water. All these emulsions possess great chemical interest on account of their rapid decomposition, and the products emanating from their fermentation, especially that made with sweet almonds and pistachios (*pistachia vera.*)

In the manufacture of various milks for sale, careful manipulation is of the utmost importance, otherwise these emulsions "will not keep;" hence more loss than profit.

"Transformation takes place in the elements of vegetable caseine (existing in seeds) from *the very moment* that sweet almonds are converted into almond milk."—Liebig. This accounts for the difficulty many persons find in making milk of almonds that does not spontaneously divide, a day or so after its manufacture.

Milk of Roses.

Valentia almonds (blanched) . .	½ lb.
Rose water	1 quart.
Alcohol (60 o. p.) . . .	¾ pint.
Otto of rose	1 drachm.
White wax, Spermaceti, Oil Soap . . .	½ oz.

Manipulation.—Shave up the soap and place it in a vessel that can be heated by steam or water bath; add to it two or three ounces of rose water. When the soap is perfectly melted add the wax and spermaceti without dividing them more than is necessary to obtain the correct weight; this ensures them melting slowly, and allows time for their partial saponification by the fluid soap; occasional stirring is necessary. While this is going on blanch the almonds, carefully excluding every particle that is in the least way damaged. Now proceed to beat up the almonds in a scrupulously clean mortar, allowing the rose water to trickle into the mass by degrees; the runner as used for the oil in the manufacture of olivine (see last number of "Annals") is very convenient for this purpose. When the emulsion of almonds is thus finished, it is to be strained, *without pressure,* through clean *washed* muslin (*new* muslin often contains starch, flour, gum or dextrine.)

The previously-formed saponaceous mixture is now to be placed in the mortar and the ready-formed emulsion in the runner; the soapy compound and the emulsion is then carefully blended together. As the last of the emulsion runs into the mortar, the spirit, in which the otto of roses has been dissolved, is to take its place, and to be *gradually* trickled into the other ingredients. A too sudden addition of the spirit frequently coagulates the milk and caused it to be curdled; as it is, the temperature of the mixture rises, and every means must be taken to keep it down; the constant agitation and cold mortar effecting that object pretty well. Finally, the now formed milk of roses is to be strained.

The almond residue may be washed with a few ounces of fresh rose water, in order to prevent any loss in bulk to the whole given quantity. The newly-formed milk should be placed in a bottle having a tap in it about a quarter of an inch from the bottom. After standing perfectly quiet for twenty-four hours it is fit to bottle. All the above precautions being taken, the milk of roses will keep any time without precipitate or creamy supernatation. These directions apply to all the other forms of milk now given.

Milk of Almonds.

Bitter almonds (blanched) . .	10 oz.
Distilled (or rose) water . .	1 quart.
Alcohol (60 o. p.) . . .	¾ pint.*
Otto of almonds . . .	½ drachm.
" bergamot . . .	2 drachms.
Wax, spermaceti, Almond oil, curd soap } each .	½ oz.

Milk of Elder.

Sweet almonds . . .	4 oz.
Elder flower water . . .	1 pint.
Alcohol (60 o. p.) . . .	8 oz.
Oil of elder flowers . . .	½ oz.
(Prepared by maceration.)	
Wax, sperm, soap, each . .	½ oz.

Milk of Dandelion.

Sweet almonds . . .	4 oz.
Rose water	1 pint.
Expressed juice of dandelion root .	1 oz.
Esprit tubereuse . . .	8 oz.
Green oil, wax Curd soap } each . .	½ oz.

Let the juice of the dandelion be perfectly fresh pressed; as it is in itself an emulsion, it may be put into the mortar after the almonds are broken up, and stirred with the water and spirit in the usual manner.

*The imperial measure only is recognised among perfumers.

Milk of Cucumber.

Sweet almonds		4 oz.
Expressed juice of cucumbers		1 pint.
Spirit (90 o. p.)		8 oz.
Green oil, wax, Curd soap	each	½ oz.

Raise the juice of the cucumbers to the boiling point for half a minute, cool it as quickly as possible, then strain through fine muslin; proceed to manipulate in the usual manner.

Creme de Pistache.

(*Milk of Pestachio Nuts.*)

Pestachio nuts		3 oz.
Orange flower water		3¼ pints.
Esprit Neroly		¾ pint.
Palm soap, Green oil, wax, Spermaceti	each	1 oz.

Lait Virginal.

Rose water		1 quart.
Tincture benzoin		½ oz.

Add the water very slowly to the tincture; by so doing an opalescent milky fluid is produced which will retain the consistency for many years; by reversing this operation, pouring the tincture into the water, a cloudy precipitate of the resinous matter ensues, which does not again become suspended in the water.

Extract of Elder Flowers.

Elder flower water		1 quart.
Tincture benzoin		1 oz.

Manipulate as for virgin's milk.

Similar compounds may, of course, be made with orange flower and other waters.

Cold Cream.

Claude Galen, the celebrated physician of Pergamos, in Asia, but who distinguished himself at Athens, then at Alexandria, and afterwards at Rome about 1,700 years ago, was the inventor of that peculiar unguent, a mixture of grease and water, which is now distinguished as cold cream in perfumery, and as *Ceratum Galeni* in Pharmacy.

The modern formula for cold cream is, however, quite a different thing to that given in the works of Galen in point of odor and quality, although substantially the same—grease and water. In perfumery there are several kinds of cold cream, distinguished by their odor, such as that of camphor, almond, violet, roses, &c. Cold cream as made by English perfumers bears

a high reputation, not only at home, but throughout Europe; the quantity exported, and which can only be reckoned by jars in hundreds of dozens, and the repeated announcements that may be seen in the shops on the continent, in Germany, France and Italy, of "Cold Creme Anglaise," is good proof of its estimation.

ROSE COLD CREAM.

Almond oil		1 lb.
Rose water		1 lb.
White wax, Spermaceti	each	1 oz.
Otto of roses		½ drachm.

Manipulation.—Into a well-glazed thick porcelain vessel, which should be deep in preference to shallow, capable of holding twice the quantity of cream that is to be made, place the wax and sperm; now put the jar into a boiling bath of water; when these materials are melted add the oil, and again subject the whole to heat until the flocks of wax and sperm are liquified; now remove the jar and contents, and set it under a runner containing the rose water—the runner may be a tin can with a small tap at the bottom, the same as used for the manufacture of milk of roses. A stirrer must be provided, made of lance wood, flat and perforated with holes the size of a sixpence, resembling in form a large palette knife. As soon as the rose water is set running the cream must be kept agitated until the whole of the water has passed into it; now and then the flow of water must be stopped, and the cream which sets at the sides of the jar scraped down, and incorporated with that which remains fluid. When the whole of the water has been incorporated the cream will be cool enough to pour into the jars for sale; at that time the otto of rose is to be added. The reason for the perfume being put in at the last moment is obvious—the heat and subsequent agitation would cause unnecessary loss by evaporation. Cold cream made in this way sets quite firmly in the jars into which it is poured, and retains "a face" resembling pure wax, although one-half is water retained in the interstices of the cream. When the pots are well glazed it will keep good for one or two years. If desired for exportation to the East or West Indies it should always be sent out in stoppered bottles.

COLD CREAM OF ALMONDS.

is prepared precisely as the above; but in place of otto of roses, otto of almonds is used.

VIOLET COLD CREAM. (1st.)

Huile violette	1 lb.	Wax and spermaceti, each	1 oz.
Rose water	1 lb.	Otto of almonds	5 d.

VIOLET COLD CREAM. (2d imitation.)

Almond oil	¾ lb.	Sperm and wax	1 oz.
Huile cassie	¼ lb.	Otto of almonds	¼ dr.
Rose water	1 lb.		

This is an elegant and economical preparation, generally admired.

TUBEREUSE, JESSAMINE AND FLEUR D'ORANGE COLD CREAM,

are prepared in similar manner to violet (first form); they are all very exquisite preparations, but as they *cost* more than rose cold cream, perfumers are not much inclined to introduce them in lieu of the latter.

CAMPHOR COLD CREAM. (*Otherwise* CAMPHOR ICE.)

Almond oil	1 lb.	Camphor	2 oz.
Rose water	1 lb	Otto of rosemary	1 dr.
Wax and spermaceti	1 oz.		

Melt the camphor, wax and sperm, in the oil, then manipulate as for cold cream of roses.

CUCUMBER COLD CREAM. (*Creme de Concombre.*)

Almond oil	1 lb.	Wax and sperm, each	1 oz.
Green oil	1 oz.	Otto of Neroly	¼ dr.
Juice of cucumbers	1 lb.		

The cucumber juice is readily obtained by subjecting the fruit to pressure in the ordinary tincture press. It must be raised to a temperature high enough to coagulate the small portion of albumen which it contains, and then strained through fine linen, as the heat is detrimental to the odor on account of the great volatility of the otto of cucumber; the following method may be adopted with advantage:—Slice the fruit very fine with a cucumber cutter, and place them in the oil; after remaining together twenty-four hours repeat the operation, using fresh fruit in the strained oil; no warmth is necessary, or, at most, not more than a summer heat; then proceed to make the cold cream in the usual manner, using the almond oil thus odorized, the rose water, and other ingredients in the regular way, perfuming, if necessary, with a little neroly.

Another and commoner preparation of cucumber is found among the Parisians, which is lard simply scented with the juice from the fruit, thus:—the lard is liquified by heat in a vessel subject to a water bath; the cucumber juice is then stirred well into it; the vessel containing the ingredients is now placed in a quiet situation to cool. The lard will rise to the surface, and when cold must be removed from the fluid juice; the same manipulation being repeated as often as required, according to the strength of odor of the fruit desired, in the grease. MELONS and other similar fruit will scent grease treated in the same way.

POMADE DIVINE.

Among the thousand and one quack nostrums, pomade divine, like James's powder, has obtained a reputation far above the most sanguine expectations of its concoctors. This article strictly belongs to the druggist, being sold as a remedial agent; nevertheless, what is sold is almost always vended by the perfumer. It is prepared thus:—

Spermaceti	¼ lb.	Gum benzoin	¼ lb.
Lard	½ lb.	Vanilla beans	1½ oz
Almond oil	¾ lb.		

Digest the whole in a vessel heated by a water bath at a temperature not exceeding 90° C. After five or six hours it is fit to strain, and may be poured into the bottles for sale. (Must be *stamped* if its medicinal qualities are stated.)

Almond Balls.		Camphor Balls.	
Purified suet . .	1 lb.	Purified suet . .	1 lb.
White wax . .	½ lb.	White wax . .	½ lb.
Otto of almonds .	1 dr.	Camphor . .	¼ lb.
" cloves .	¼ dr.	Otto of French lavender or rosemary .	½ oz.

Both the above articles are sold either white or colored with alkanet root. When thoroughly melted the material is cast in a mould; ounce gallipots with smooth bottoms answer very well for casting in. Some venders use only large pill boxes.

Camphor Paste.

Sweet almond oil .	½ lb.	Wax and spermaceti } each	1 oz.
Purified lard . .	¼ lb.	Camphor }	

Glycerine Balsam.

White wax } each	1 oz.	Glycerine . .	2 oz.
Spermaceti }		Otto of roses . .	¼ dr.
Almond oil . .	½ lb.		

Of the remedial action of any of the above preparations we cannot here discuss; in giving the formulæ it is enough for us that they are sold by perfumers.

Rose Lip Salve.

Almond oil . .	1 lb.	Alkanet root . .	2 oz.
Spermaceti and wax, each	2 oz.	Otto of roses . .	¼ oz.

Place the wax, sperm, and oil on to the alkanet root in a vessel heated by steam or water bath; after the materials are melted they must digest on the alkanet to extract its color for at least four or five hours; finally, strain through fine muslin, then add the perfume just before it cools.

White Lip Salve.

Almond oil . .	½ lb.	Otto of almonds .	½ drachm.
Wax and spermaceti, each	1 oz.	" geraniums .	¼ drachm.

After lip salve is poured into the pots and got cold, a red hot iron must be held over them for a minute or so, in order that the heat radiated from the irons may melt the surface of the salve and give it an even face.

Annals of Pharmacy.

Gelatine Paper.—Mr. Dobell has called the attention of the Royal Society to Gelatine Paper as a medium for coloring light, likely to be useful in many employments, and in cases of weak sight. This kind of paper, which was first invented at Rouen, in 1829, is now produced in great perfection; it is highly transparent, and in sheets measuring sixteen inches by twenty

two, but can be made, if required, of the dimensions of the largest plate glass. These sheets, moistened with a solution of gelatine, may be stuck on the panes of a window, and thus change the light admitted to any required color. A green light, falling on the white silk made up by dressmakers, deprives it of all its painful glare; and in the same way, yellow silk is made to appear green by a blue light, as has been proved by actual experiment, and it is attended with the happiest results. Jewellers who have tried the green paper, say that, when once accustomed to working in a colored light, they find it greatly relieves their eyes. In reading, too, a sheet of the green paper laid on the page preserves weak eyes from being injured by the strong contrast of black and white, and enables many to read with comfort who have been hitherto obliged by too susceptible vision to abstain from books. Other applications of gelatine paper naturally suggest themselves; it may be used as screens and shades for many purposes; the glasses of spectacles may be coated with it; gardeners may use it in their conservatories; and the yellow will probably be taken into their service by photographers. By the addition of a small quantity of acetate of alumina during the process of manufacture, the gelatine paper becomes water-proof, just as linen or woollen cloth is rendered water-proof by the same chemical substance.—*Med. Times and Gazette*, January 6, 1855, from *Chambers' Journal.*

On the Fluid Extract of Scutellaria Lateriflora. By Joseph Bates, M. D.—Lately I have been using Tilden's fluid extract of scutellaria, with signal success, in the treatment of diseases attended with nervous irritation and irritability, restlessness, &c. In the treatment of children, it is invaluable for allaying these symptoms. The dose is a teaspoonful, repeated as often as the circumstances or indications require. It may be relied upon in some forms of hysteria. Patients convalescing from typhoid fevers, pneumonitis, arthritis, &c., or any disease with those symptoms, will be shortly relieved by one or two teaspoonfuls of this preparation. I have no hesitation in saying that those who give it a fair trial will find it efficient in the treatment of many diseases for the relief of which small doses of opium are frequently given, without any of its unpleasant sequences. Much more might be added in bringing this subject before the profession, but I have already, doubtless, trespassed in making my communication too long.

Boston Med. and Surg. Jour.

New Lebanon Springs, N. Y., May 7th, 1855.

Editorial Department.

PHARMACEUTICAL MEETINGS OF THE PHILADELPHIA COLLEGE OF PHARMACY.—At the request of the Register, Samuel S. Garrigues, we take this means of informing the members and graduates of the Philadelphia College of Pharmacy, that these meetings are held at the College Hall, Zane st., above 7th, on the first Monday of every month, from October to May inclusive. All members who would like it, will be notified regularly of the time of meeting by sending their names to the Register, (N. E. cor. 10th and Coates sts.), with such a request. As these meetings are devoted entirely to scientific and other subjects of interest to apothecaries and druggists generally, and are conducted in an informal, conversational manner, all may take part. Graduates, who are not members, are at liberty to attend and partake in the discussions, and members are invited to bring any specimens of drugs, chemicals, preparations or papers of interest.

THAYER'S FLUID EXTRACTS.—We are indebted to Messrs. Henry Thayer & Co., of Cambridgeport, Massachusetts, for some fifteen samples of the fluid extracts prepared by them. A peculiarity of these extracts is that they all contain about 20 per cent. of alcohol, as the means of preservation, whether made with that menstruum or not. In those cases where the nature of the drug is resinous or oily, the proportion of alcohol is increased as far as is proper, to secure the solution of these bodies. They may therefore be looked upon as concentrated tinctures, with about half the usual proportion of alcohol found in that class of medicines. In the preparation of these fluid extracts, Dr. Thayer uses the process of displacement and the vacuum pan. In those cases where the alcohol present is an obstacle to their use, the honest answer is, employ other non-alcoholic preparations, but in a very large number of cases the small quantity of alcohol contained in them in their concentrated state is so insignificant that it may be overlooked. In strength they generally conform to the published recipes, and are more permanent than the saccharine fluid extracts, especially in cases where the active ingredients are insoluble or but partially soluble in a saccharine aqueous menstruum. We have only had leisure to examine a few of the samples, as those of Conium, Senna and Buchu, and have been very favorably impressed in regard to their efficiency. The Conium retains the natural odor of the dried leaves to a marked degree. The Senna is made with water, and after evaporation, sufficient alcohol added to preserve it. A medical friend, to whom we gave a portion, speaks of its efficiency as a cathartic, but says its action was attended with some griping. This probably arises from the

absence of aromatics the preparation having the pure odor of senna. The Buchu speaks for itself.

German Pharmaceutical Society of New York.—Mr. J. M. Maisch, of New York, has furnished us with a *MS.* copy of the constitution of a Society of German Apothecaries in that City, and, as many of our readers are not aware of the existence of this association, we present it to their notice. An association likewise exists among some of the Germans of this city, with reference to foreign periodical literature, and the advantages which accrue to the members of such unions is so marked, that they are worthy of imitation by American pharmaceutists.

Statutes of the New York Pharmaceutical Society.

Founded October 1, 1851.

Art. I.—*Object of the Society.*

The German Pharmaceutical Society of the City of New York has for its object the scientific and collegiate advancement of the apothecaries of New York, and neighboring cities. It provides for mutual improvement in science, and procures by its means, the best works on pharmacy and technics.

Art. II.—*On becoming a Member of the Society.*

1. Every real apothecary, who is the owner of an apothecary store in New York, or its neighborhood, may become an actual Member of this Society; and an *extraordinary Member*, every one, whose study is connected with the natural sciences. These last named members enjoy all rights, with the exception of votes at the election of the officers, and at the alteration of the Statutes; they also have no claim on the property of the Society.

2. Applications for membership must be made in writing to the President, who notifies the members in his next circular, with his request to present their objections, if any, either verbally or in writing, at the next meeting of the officers, which then accepts or rejects the applicant.

3. Each actual member on becoming such, has to sign the Statutes, and to pay two dollars to the Treasurer.

Art. III.—*Contributions.*

Actual Members pay monthly, 50 cts.
Extraordinary Members pay monthly, 25 cts.

Article. IV.

1. Members, on voluntarily leaving the Society, or on changing their residence, have to notify the President in writing; they have no claim on the property of the Society, but they may become members again, provided they have paid their dues up to the day of their quitting.

2. Members, who are in arrears for three months, and have been notified by the Treasurer, are regarded as expelled; the same of those Members who neglect to visit the General Meetings once a year, without sending a written excuse to the President.

Article V.

1. The business of the Society is conducted by a Board, consisting of seven Members, including President, Treasurer and Secretary.

2. They shall be elected at the Annual Meeting by a simple majority, for one year; they do not receive any compensation for their services, but are allowed the necessary expenses for writing materials.

ART. VI.—*Duties of the Board.*

1. The President, or in his absence, some Member of the Board, presides at the meetings.

2. The Secretary keeps the minutes, notifies the Members of the resolutions of the Board, carries on the correspondence; he is Librarian ex-officio, and has the keeping of all journals, books, and specimens belonging to the Society.

3. The Treasurer collects the dues for admittance, and the monthly dues of the Members, reports annually to the Society on the receipts and expenditures, and pays the expenses only after countersignature by the President and Secretary.

ART. VII.—*Meetings.*

1. The Board meets monthly, and fixes the time for the General Meetings, of which there shall not be less than two annually. Extra meetings may be convoked by the President, on the motion of two members.

2. The business shall be conducted in the following order:

1. Reading of the Minutes of the last General Meeting.
2. Report of Committees and of the Board.
3. Unfinished Business, &c.

ARTICLE VII.

The Statutes have validity for a year, when propositions for alterations may be handed in writing to the Board, and discussed on the next following meeting.

ARTICLE IX.

The Society remains in existence as long as there are five actual members, who may then dispose of the property.

ARTICLE X.

1. The Society uses its receipts for purchasing books and journals, which are to be distributed by a carrier employed by the Board.

2. The distribution is under the superintendence of the Board, who have to take due consideration of the residence of the members.

3. The reading time is seven days.

ARTICLE XI.

The Members agree to take apprentices only under the following conditions:

1. Apprentices entering with their fourteenth year, have to stand four years; those entering after their sixteenth, three years; and when entering after their eighteenth, two years. The members consider it obligatory to notify the Board on taking an apprentice.

2. These apprentices, after the time of their apprenticeship, have to pass a stringent examination before a commission, and on passing the examination receive a certificate.

BRONZE LATIN LABELS FOR SHOP FURNITURE.—For some months past, the Committee of the Philadelphia College of Pharmacy, on Latin Labels, have been engaged in getting out a new edition of the work, with an entirely new form of labels, which they expect to be ready for delivery in the present month, (January). The book will contain about 180 sheets or leaves bound together, and embracing more than 1600 labels, of five different sizes, for drawers and bottles. They are done in bronze on steel blue paper by a new process, which, while it increases the beauty of the labels, prevents the bronze from rubbing off. The Committee have endeavored to make this the most correct edition yet published, and as it embraces more than 400 more labels than the last edition, it merits the attention of pharmaceutists and druggists. For further information see the advertising sheet.

Eclectic Remedies as prepared by the Shakers.—During a visit to the Shaker village last September, we were shown some crude specimens of some of the "concentrated preparations," so called by the Eclectic physicians, which were in course of preparation. Since then, Mr. Fowler, the enterprising chief of the medicine department of that people, has sent us specimens of *Leptandrin, Myricin, Podophyllin, Colocynthin* and *Macroytin*, neatly put up in ounce vials, enclosed in paper boxes, the vials covered with tin caps. The Macroytin and Podophyllin appear to be the resinoid matter of the respective drugs obtained in the way described in eclectic books. They have not been treated with animal charcoal or otherwise deprived of coloring matter, but possess the odor and appearance of pure preparations. In reference to the Colocynthin resin, we have some theoretical doubts. Colocynth pulp contains about 13 per cent. of resin, and 14 per cent. of colocynthin, but we are not prepared to say how much of the latter is retained in the resin after it is washed with water, nor will it be easy to decide the question without resort to a physiological experiment. If it does retain its activity this preparation may become a valuable agent in the hands of the physician. The Myricin and Leptandrin of the Shakers, are simply dry alcoholic extracts reduced to powder. They appear to possess the active properties of the respective plants yielding them, yet we cannot but believe that the really active principles may be more nearly reached than by a simple extract, as they do not seem to be resins. We would advise that in all cases where the character of the preparations, obtained by certain processes, is not well established, that the products be therapeutically tested by medical men *before* they are thrown into commerce, and their relative medicinal activity determined.

History of Medicine, from its origin to the nineteenth century, with an appendix, containing a philosophical and historical review of medicine at the present time. P. V. Renouard, M. D. *Translated from the French by* Cornelius G. Comegys, M. D., Professor of the Institute of Medicine, Miami Medical College. Cincinnati, Moore, Wilstach, Keys & Co. 1856. Pp. 719, octavo.

The author commences his work with the following quotation from Cabanis: "In order to study and practice Medicine in a proper manner it is necessary to be impressed with its importance; and to be so impressed we must believe in it." Which is evidently pointed at the skepticism in reference to medicine, as a science, which has and does prevail with many physicians.

Our author evidently himself is no medical skeptic. A careful study of its history has convinced him that in spite of its rival theories and changing doctrines, past and present, that there is a science of medicine around which, and mixed with which, these hypotheses exist. "As a science so far as regards theories, medicine offers the picture of a republic delivered up to many rival factions, which dominate by turns without ever obtaining lasting power. Theory is an arena of interminable discussions a real tower of Babel; it is the apple of discord among physicians. Who can flatter

himself to hold the equal balance among so many diverse or contrary opinions, to distribute equitably praise and blame; to mark the precise limit in each where truth ends and error commences?"

"This difficult enterprise I undertook, not to with a view of instructing others, but myself; not with the intention of publishing the result of my research, for I was ignorant what it would be, but pressed by a desire to assure myself if there exists in Medicine anything useful and certain, any principle whose evidence is as striking as that of a mathematical axiom, some practical rule whose utility would be incontestible."

Sprengel, the only historian who had attempted this task, had arrived at the conclusion—"That skepticism in medicine is the top stone of the science, and that it is the wisest part to regard all opinions with indifference and adopt none." This maxim our author holds to be erroneous, hopeless, and impracticable. He considers that "pure skepticism, then is impossible in a practitioner who each day finds himself placed in the necessity of making a decision on which will depend, perhaps, the life of his fellow-man. A practitioner can, therefore, not indulge in the skeptical indifference of which Sprengel boasts; he must on the contrary use every effort to free himself from it and rise to the point of rational conviction."

In this disposition of mind the author undertook to examine ancient and modern medical doctrines.

We have not space to pursue further the steps of his progress, but will quote from the introduction an outline of the arrangement of the subject.

"I divide into three books or three ages all past time. The first age commences with the infancy of Society as far back as historic tradition carries us, and terminates towards the second century of the Christian Era at the death of Galen in the reign of Septimus Severus. This lapse of time constitutes in medicine the foundation age. The germ of the Healing Art concealed, at first, in the instincts of men, is gradually developed; the basis of the science is laid and great principles are discussed. The human mind, always impatient, surpasses in its speculations the limits of the known and possible. Many branches of the art, such as Symptomatology and Prognosis are carried to a remarkable degree of perfection.

"The second age, which may be called the Age of Transition, offers very little material to the history of Medicine. We see no longer the conflicts and discussions between partizans of different doctrines; the medical sects are confounded. The art remains stationary, or imperceptibly retrogrades. I cannot better depict this epoch than by comparing it to the life of an insect in the nympha state; though no exterior change appears, an admirable metamorphosis is going on imperceptibly, within. The eye of man only perceives the wonder after it has been finished.

"Thus, from the fifteenth century, which is the beginning of the third and last Age of Medicine, or the Age of Renovation, Europe offers a spectacle of which the most glorious eras of the republics of Greece and Rome only can give us an idea. It would seem as if a new life was infused into the veins of the inhabitants of this part of the world; the sciences, fine arts, industry, religion, social institutions, all are changed. A multitude of schools are opened for teaching medicine. Establishments which had no models among the ancients are created for the purpose of extending to the poorer classes the benefits of the Healing Art. The ingenious activity of modern Christians explores and is sufficient for everything."

These three ages our author divides into eight periods, which he succintly indicates as follows:

"The first, which we name the *Primitive Period* or that of *Instinct*, ends with the ruin of Troy, about twelve centuries before the Christian Era.

"The second, called the *Mystic* or *Sacred Period*, extends from the dissolution of the Pythagorean society to about the year 500 A. C.

"The third period, which ends at the foundation of the Alexandrian library, A. C. 320, we name the *Philosophical Period*.

"The fourth, which we designate the *Anatomic*, extends to the end of the first age, i. e. to the year 200 of the Christian Era.

"The fifth is called the *Greek Period;* it ends at the destruction of the Alexandrian Library, A. D. 640.

"The sixth receives the surname of *Arabic* and closes with the fourteenth century.

"The seventh period, which begins the third age, comprises the 15th and 16th centuries; it is distinguished as the *Erudite*.

"Finally, the eighth or last period embraces the 17th and 18th centuries. I call it the *Reform Period*.

The author has continued the history of medicine to the present time, in a series of detached essays published after his work, which the translator has conveniently brought together as an addenda. In glancing over this interesting volume there are many items we should like to offer for the instruction and amusement of our readers, and among them the excellent biographical pictures which our author sketches of medical characters, ancient and modern, as Hippocrates, Galen, Avicenna, Ambrose Parê, Haller, Harvey and Jenner, but space will not permit. But we must briefly allude to two points in the annals of Medicine which have given an impulse to its progress. The first was when the revelation, by the disciples of Pythagoras, of the mysteries of the Indo-Egyptian school of medicine, which for ages had been confined to the temples, caused the priests of Esculapius to bring to light the principles and rules of their medical practice under the penalty of seeing the sceptre of Medicine fall from their hands. The other was the taking of Constantinople by the Turks in 1483, under Mahomet II, which event drove a large number of learned men with their manuscripts to the cities of Western Europe, where they soon created a taste for Greek literature and gave an impulse to medicine which has never yet ceased.

The translator, Dr. Comegys has ably acquitted himself of the laborious task, and merits the thanks of every English medical reader in thus opening to their perusal the best history of medicine extant, and we doubt not the work will find a place in the library of every physician who aims at an acquaintance with the past history of his profession. To the enlightened pharmaceutist it also presents itself as a means of tracing back the history of his art in those long periods when it was involved in the duties of the physician. Our author says, "If it be true, and it cannot be doubted, that Therapeutics is really the essential part of Medicine—if it, in fact, combines all the advantages of the science, it cannot be questioned but that the ancients are far in our rear;" and granting the author's premises it may not be saying too much to aver, that the progress of Therapeutics in the last two centuries has been largely aided by the severance of Pharmacy

from Medicine, and its union with chemistry in the hands of a distinct class of laborers.

In concluding our brief notice, we must remark that the mechanical execution and material of the work are a credit to the Cincinnati press.

Pronouncing Medical Lexicon, containing the correct pronunciation and definition of most of the terms used by speakers and writers on Medicine and the collateral sciences, with addenda. By C. H. CLEVELAND, M. D., &c. Cincinnati: Longly & Bro. 1855. pp. 302, 18mo.

For the above useful little volume we are indebted to the author. It is at once a scientific lexicon and a pronouncing dictionary of technical and scientific terms. The author, to convey his ideas of correct pronunciation, has adopted the phonetic signs, and in a preliminary table he gives these, so that those unacquainted with them may learn. As comparatively few have any acquaintance with the phonetic symbols, their adoption will be at first an impediment, but once learned they greatly facilitate the comprehension of the sounds intended.

The definitions are generally of the briefest character, the author aiming rather at comprehensiveness than fulness, yet in most cases the reader gets a fair idea. Occasionally a want of clearness is marked. For instance, "Nitric acid" is defined to be "Aqua Fortis," and the latter to be "Nitric acid." It would have been better to have said "Nitric acid, the highest oxide of nitrogen; a corrosive acid," and then, nitric acid as the definition of aqua fortis, would have been sufficient. And so of other items. Should the book go to another edition, the author might advantageously avail himself of chemical notation and symbols, in many cases, to give fulness without much increasing size. Errors in the text, typographical and in meaning, are not unfrequent, and exhibit a hasty revision of the proof sheets, as well as some want of care on the part of the author; for instance, at p. 22, Angustura is defined to be "a bark used in medicine yielding Brucia." The term "Cortex," is defined "Bark, the Peruvian Bark." "Docemasia" is called the "Art of examining fossils." "Magnesia Alba," is defined to be "oxide of magnesia." "Picro glycion" is said to be "an impure solanin obtained from Dulcamara." Besides this kind of errors, we observe some words spelled wrong and the error endorsed in the explanatory pronunciation, as "Galipera," for "Galipea." Gaultheria "procumbus," for procumb*ens*; but these imperfections may be removed in another edition. On the other hand, the *virtues* of the book are very numerous; its small size, and the perspicuity exhibited in a large number of its definitions, and its extensive range of subjects, will render it a valuable aid to medical and pharmaceutical students, in calling to mind what has been learned and forgotten, or in understanding terms in the course of reading. It may also prove an excellent aid to the dispenser, in solving the obscure language in which some physicians seem to take pleasure in couching their prescriptions, to the great annoyance of the apothecary.

CATALOGUE OF THE CLASS OF THE PHILADELPHIA COLLEGE OF PHARMACY.

FOR THE THIRTY-FIFTH SESSION, 1855—56.

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Wilson, Adam H.	"	"	John Moffet,
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Young, Joseph	"	"	J. R. Angney, M. D.,
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